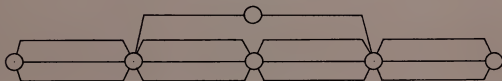


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STATE of MONTANA

DEPARTMENT of HIGHWAYS

PRECONSTRUCTION MANAGEMENT SYSTEM



UNIT ACTIVITY DESCRIPTIONS

STATE DOCUMENTS COLLECTION

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Project Management Unit

5-14-82

MONTANA STATE LIBRARY

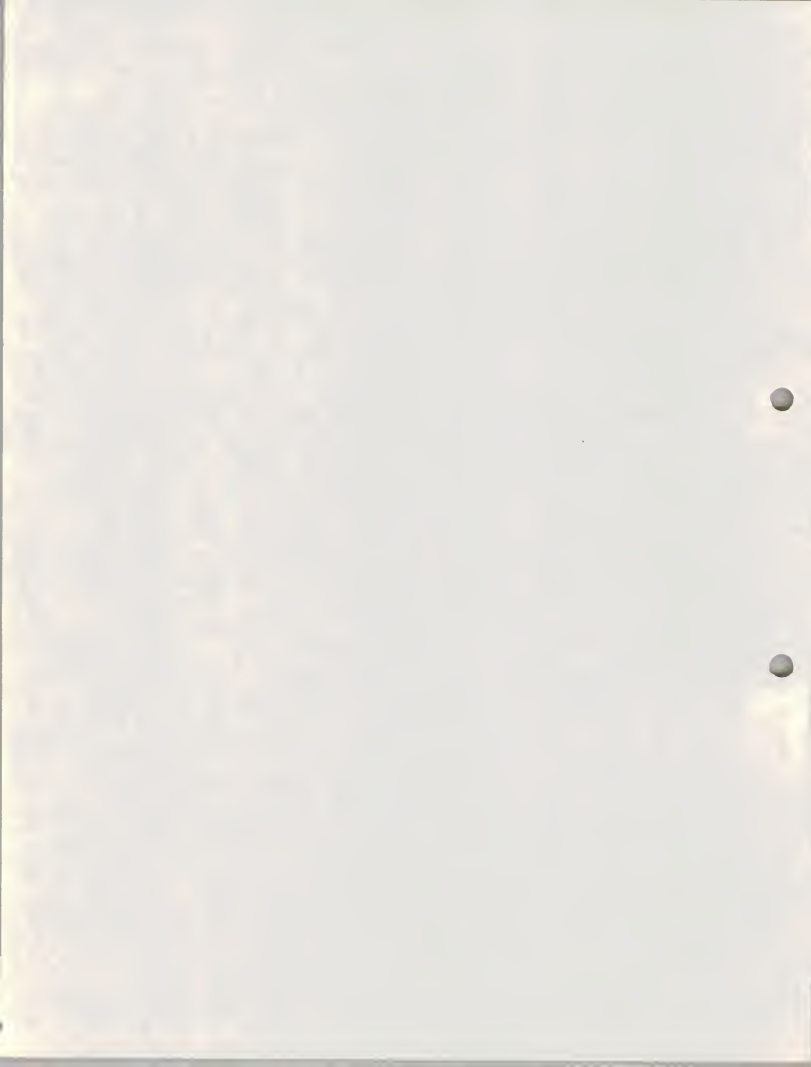


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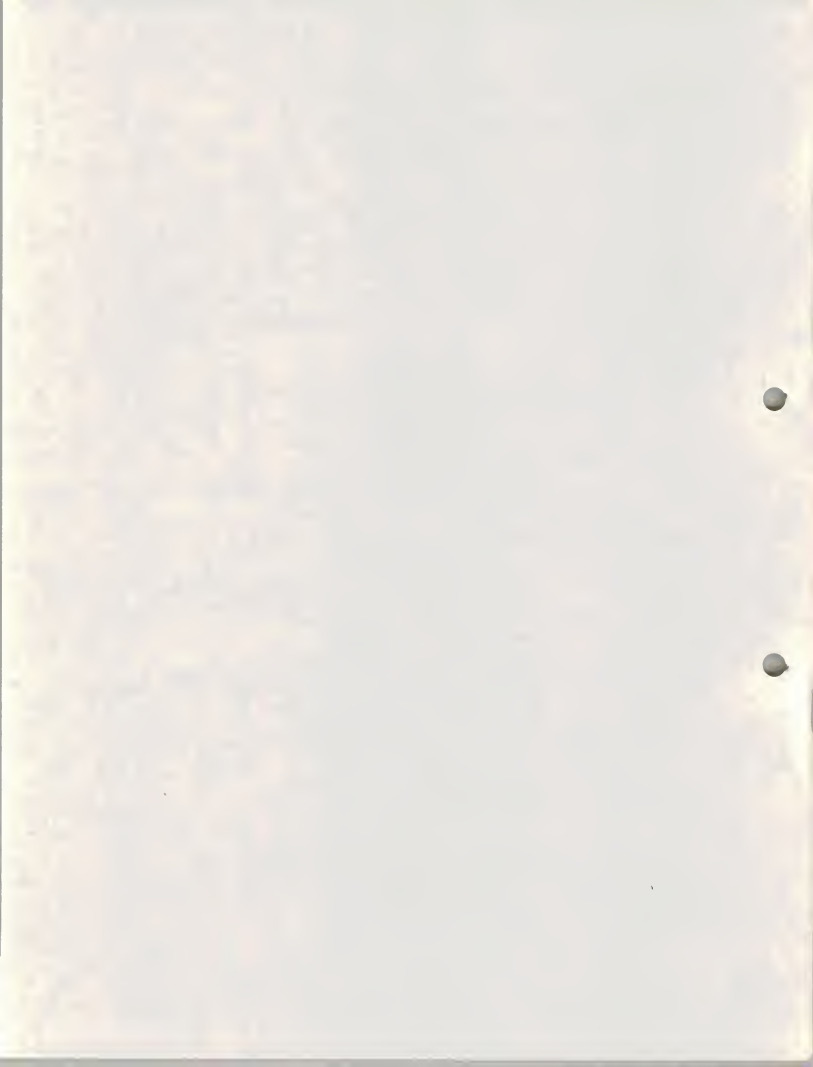
ACTIVITY DESCRIPTION

Index

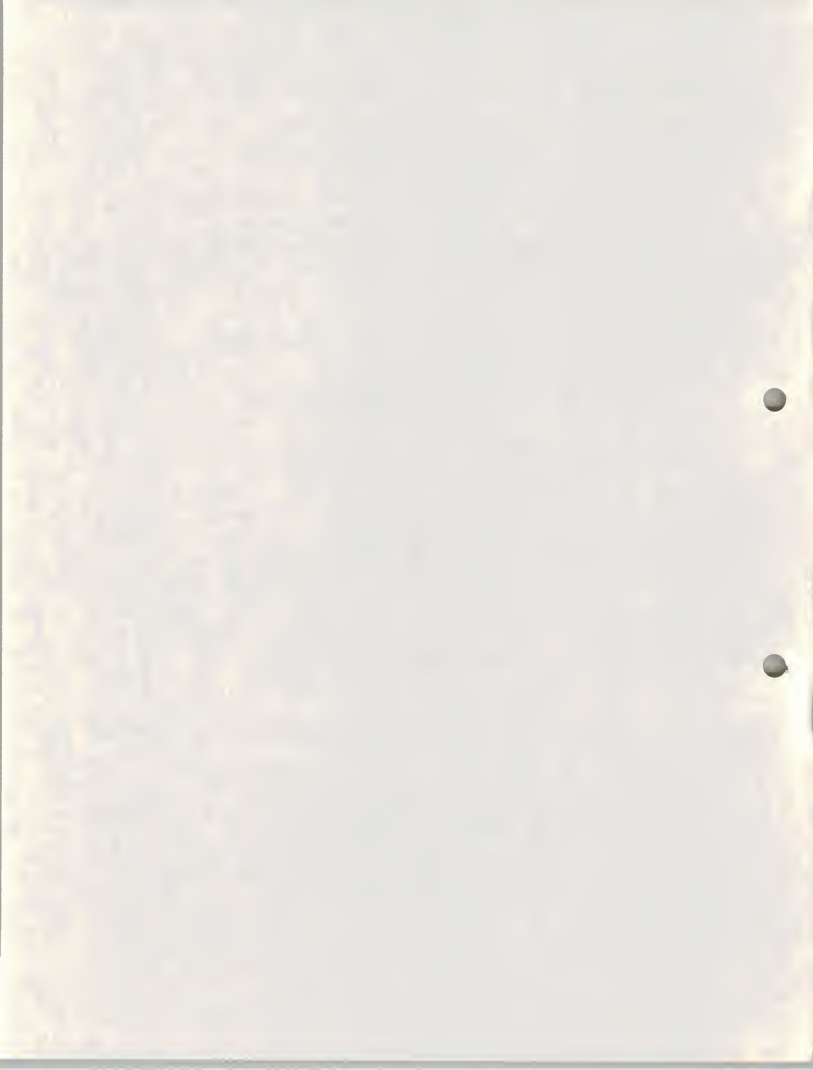
<u>Unit</u>	<u>Assigned No. Sequence</u>
1. Planning100(950)-149
2. Project Managment150-199
3. Road Design200-299
4. Photogrammetry.300-349
5. Hydraulics.350-399
6. Traffic400-449
7. Materials450-499
8. Field Survey500-549
9. Bridge.550-599
10. Surfacing600-649
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<u>ACTIVITY NUMBER</u>	<u>ACTIVITY DESCRIPTIONS</u>
100 (950)	Identify Planning Data
102	Assign Project Number
104	Prepare Land Use Planning Report
150	Prepare Prelim. Work Schedule
152	Predict Earliest Letting Date
154	Determine Earliest Letting Date
156	Receive & Process Initial Project Cost Data
158	Receive & Update Final Project Cost Data
200	Assign Area Eng. & Develop Letter of Intent
202	Develop & Distribute Location Planning Report
204	Draft Env. Assessment/Draft E.I.S., etc.
206	Develop Final Env. Document
208	Location Approval
210	Dist. Survey Info. & Request Design Input
212	Prepare Plan & Profile Sheets
214	Prepare Design Planning Report
216	Prepare Prelim. R/W Plans
218	Estab. Prelim. Align., Grade & R/W Plans
220	Prelim. Plan-in-Hand Inspection
222	Secure Design Approval
224	Determine Final Const. Limits
226	Prepare R/W Plans for 2nd Brownline Submittal
228	Design Miscellaneous Features
230	Final Plan-in-Hand Inspection
232	Prepare Final R/W Plans
234	Final Design
236	Check Plans
300	Obtain Preliminary Aerial Photo
302	Horizontal Target Control
304	Aerial Photography
306	Elevation Image Control



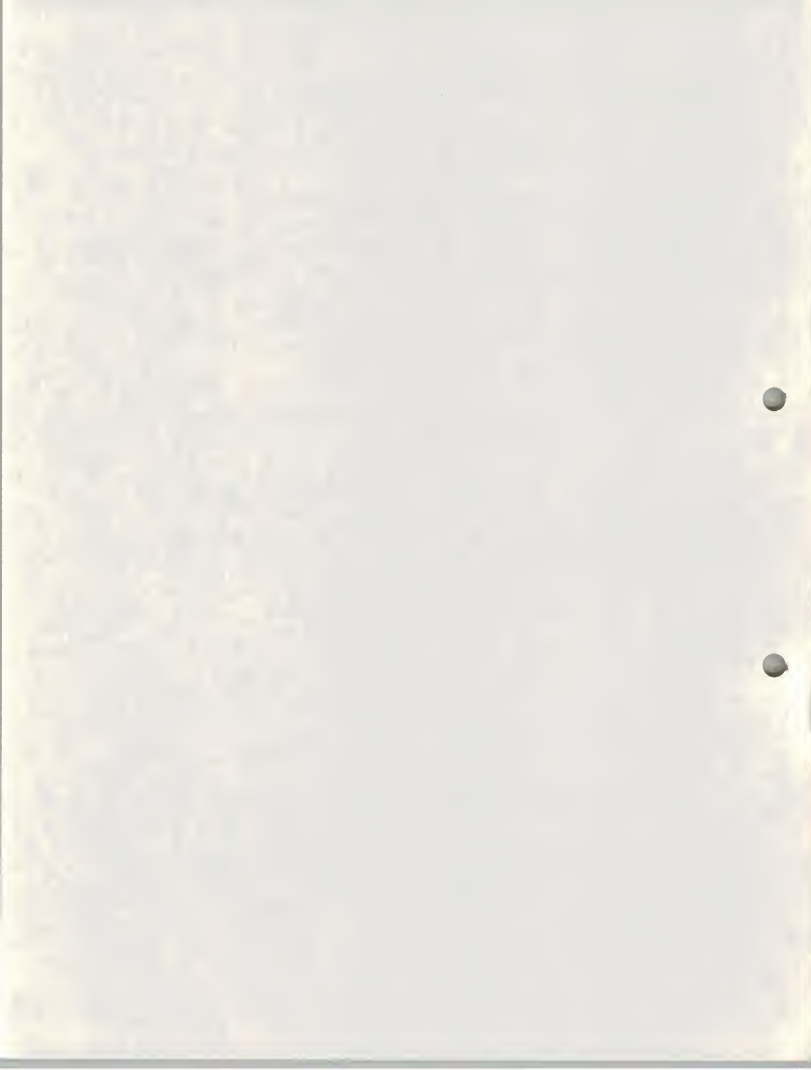
<u>ACTIVITY NUMBER</u>	<u>ACTIVITY DESCRIPTIONS</u>
308	Photogrammetry Mapping Data
310	Photogrammetric Cross Sections
350	Assemble Prelim. Drain. & Irrig. Info.
352	Compile Drainage Basin Parameters
354	Prepare Location Hyd. Study Report.
356	Update Drain. & Irrig. Data
358	Compute Runoff
360	Analyze Floods
362	Complete Prelim. Storm Drain Design
364	Size Drainage Structures
366	Compute Water Surface Profiles
368	Size Irrigation Structures
370	Prepare Prelim. Hyd. Report
372	Revise & Update Hyd. Recomm.
374	Prepare Storm Drain Design
376	Determine Special Hyd. Requirements
378	Prepare, Submit & Co-ord. Irr. Det. for Approval
380	Prepare & Submit Regulatory Permits
382	Co-ord. Approval of Regulatory Permits
384	Revise, Update & Finalize Hyd. Dr. Recomm.
386	Revise, Update & Finalize Irr. Recomm.
388	Prepare Special Details & Provisions
400	Noise Study
402	Prepare Report on Noise, Traf. Des. & Related Problems
404	Preliminary Signal & Lighting Study
406	Prepare Preliminary Geometrics
408	Prepare Traffic Signal Plans
410	Prepare Roadway Lighting Plans
412	Permanent Signing & Pvmt. Marking Plans
414	Revise & Update Traffic Plans



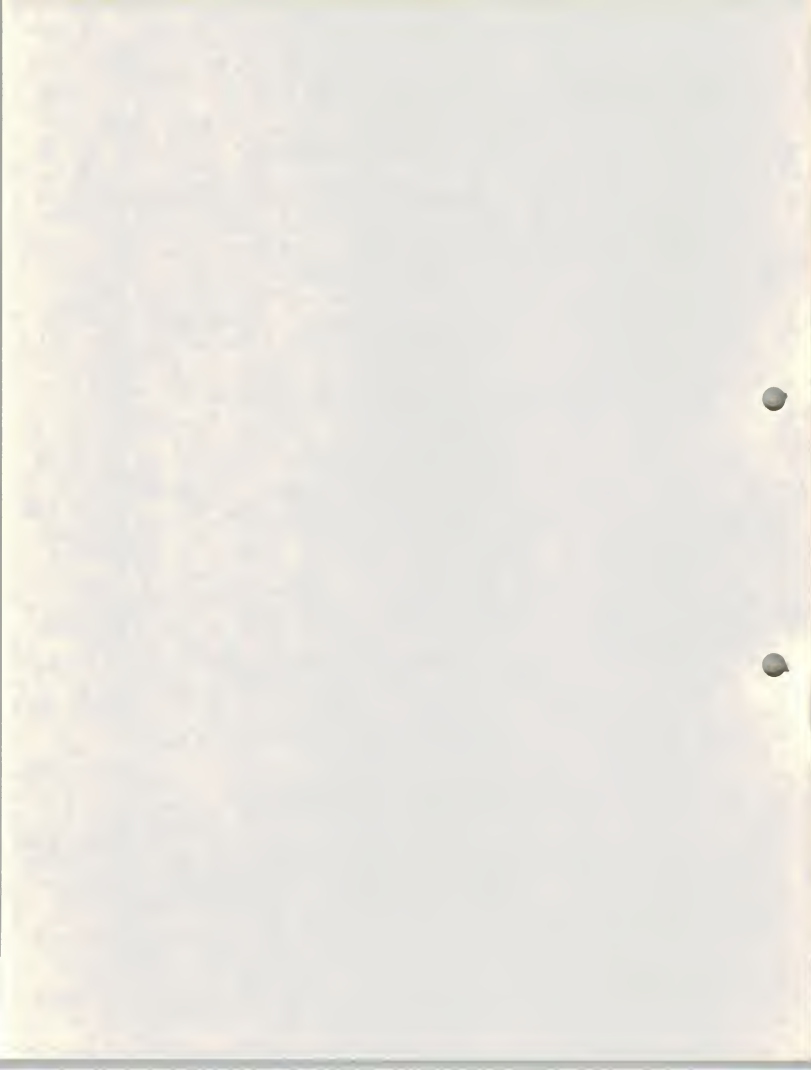
ACTIVITY NUMBER

ACTIVITY DESCRIPTIONS

450	Soil Survey Investigation (Field)
452	Borrow & Surface Pit Investigation (Field)
454	Corrosion Testing
456	Materials Surfacing Pit Testing
458	Geotechnical Surveys - Preliminary
460	Geotechnical Materials Testing - Prelim.
462	Geotechnical Engineering - Preliminary
464	Geotechnical Surveys - Final
466	Geotechnical Materials Testing - Final
468	Geotechnical Engineering - Final
470	Obtain Core Drill Data
500	Photogrammetry Ground Control Survey
502	Perform Field Survey
550	Initiate File & Place on Work Program
552	Prepare Preliminary Br. Layout
554	Prepare Br. General Layout for P.I.H.
556	Complete P.I.H. & Interagency Approvals
558	Design & Detail Bridge
560	Final Check of Bridge Plans
562	Review by Bridge Engineer
600	Prepare Surfacing Typical Section
650	Prepare for Public Hearing
652	Location or Location-Design Public Hearing
654	Design Public Hearing
656	Info. Notice of Final Design Approval
700	Landscape Architect Review & Report
702	Landscape Architect Input (Costs)
704	Preliminary Rest Area Feasibility



<u>ACTIVITY NUMBER</u>	<u>ACTIVITY DESCRIPTIONS</u>
706	Prepare Landscape Architectural Plan
708	Develop Final Rest Area P.S.&E.
800	Request Preliminary R/W Reports & Estimates
802	Preliminary Utility Review & Estimates
804	Obtain Title Evidence
806	Limited Access Control Study
808	Limited Access Control Resolution
810	Justification of Land Service Facilities
812	Obtain Right-of-Way Authorization Data
814	Obtain Authorization to Acquire
816	Authorize Project for Acquisition
818	Assign Appraiser
820	Appraise Right-of-Way
822	Review Appraisals
824	Negotiate for Railroad Agrmts. & Easements
826	Negotiate for Utility Agreements
828	Assign Negotiator
830	Negotiate Right-of-Way
832	Prepare Condemnation Package
834	Write Relocation Assistance Plan
836	Provide Relocation Assistance
838	Negotiate Pit Agreements & Haul Roads
840	Negotiate Federal, State & Indian Lands
842	Remove Acquired Improvements
844	Prepare Deed Exhibit
846	Relocate Utilities
848	Certify Right-of-Way Clearance
850	Certify Clearance of Utilities
900	Prepare & File Cases in District Court
902	Prepare Prelim. Orders of Condemnation
904	Secure Orders Putting Plaintiff in Possession



ACTIVITY: IDENTIFY PLANNING DATA

DEFINITION: Planning identifies needs through traffic accident reports, traffic volumes, sufficiency studies, public and district requests. The data is analyzed and furnished to Project Management Unit.

OUTPUT PROVIDED: Listing of needed highway improvements.

TASKS: Provide current and projected traffic volumes.
Provide necessary accident data.
Obtain public and department input.
Correlate needs to projects.
Sufficiency ratings.

START

DEPENDENCIES: Systems planning identifies needs.

DISTRIBUTION AND USE: The identification of needs and the data information is used by Project Management for project familiarization. The data is also used to prepare a preliminary work schedule for downstream work activities.



ACTIVITY: ASSIGN PROJECT NUMBER

DEFINITION: Assignment of a number by the Fiscal Programming Unit, following DOH approval for continuation of the project.

OUTPUT
PROVIDED: Project number to be used for work reporting and accounting purposes. FHWA program approval.

TASKS: Apply methodology for assigning project numbers to individual project.

START
DEPENDENCIES: DOH Approval and related documents.

DISTRIBUTION
AND USE: The project number is used to identify a project.



ACTIVITY: PREPARE LAND USE PLANNING REPORT

DEFINITION: Land Use reports identify potential land use conflicts or problems that may be encountered prior to project design. Information is gathered from local planning agencies and local governments which aids in the comprehensive planning eliminating as many future conflicts as possible. The information is analyzed recommendations are made and forwarded to the Road Design Section.

OUTPUT

PROVIDED: Comprehensive land use report of the proposed project corridor.

TASKS: Early identification of social, economic and environmental effects, (both beneficial and adverse) also identifying probable adverse land use effects due to highway induced facilities.

START

DEPENDENCIES: Request received from Road Design, copy of location planning report and two autoscreens showing the approximate alternate locations.

DISTRIBUTION
AND USE:

The early identification of SEE impacts and land use effects serves to minimize or avoid adverse effects, therefore alternatives can be studied, described and used by the Road Design Section in project development. Also included in the early identification process is the impact on non-transportation components, such as joint development, multiple use of right-of-way, etc. These items are considered during the process of impact evaluation studies so that any plans for non-transportation components can be coordinated with plans for transportation components.



ACTIVITY: Prepare Preliminary Work Schedule.

DEFINITION: Prepare a preliminary work schedule for route flow, single project flow (alternates) or for single project flow (fixed location).

OUTPUT PROVIDED: Preliminary work schedule for flow activities.

TASKS: Collect project data.
Characterize project into a project type.
Process project through single project scheduling to set time requirements.
Prepare a work schedule of activities and complete dates for each project.

START DEPENDENCIES: Planning identifies needs, furnishes data.

DISTRIBUTION AND USE: Used to schedule activities for the various flow networks.



ACTIVITY: Predict Earliest Letting Date.

DEFINITION: Anticipating of the earliest practical letting date for a project. This is an update following completion of preliminary work activities and establishing project scope.

OUTPUT PROVIDED: Recommend project letting date as necessary.

TASKS: Review project scope.
Redefine project characteristics.
Determine project developmental time.
Analyze available funding.
Predict earliest letting date.
Prepare project schedule.

START

DEPENDENCIES: Completion of environmental level of effort.
Preliminary construction costs.
Develop project data, scope and alternates.

DISTRIBUTION AND USE: All sections within Program Development for managing work



ACTIVITY: Determine Earliest Possible Letting Dates

DEFINITION: Establish earliest possible letting dates for a project or projects using available project information.

OUTPUT PROVIDED: Schedule of earliest possible letting dates.

TASKS: Computer processing to set developmental time.
 Analysis of available funding.
 Analyze geographical, seasonal, and political influences on project.
 Analyze project work requirements in relation to work required for all other projects.
 Analyze project type priorities.

START

DEPENDENCIES: Final Environmental Impact Statement.

DISTRIBUTION AND USE: Used to prepare a program of projects for design preparation.



ACTIVITY: Receive & Process Initial Project Cost Data

DEFINITION: Preconstruction submits an estimate of costs for quantities expected to be required to construct the planned project. These estimates help in developing future schedules and in planning funding needs.

OUTPUT PROVIDED: PMS system reports indicating estimated funding necessary to construct project.

TASKS: Receive preliminary cost estimate from Preconstruction and enter estimate total into systems as required.
Examine schedule of planned letting and adjust if funding levels appear inadequate.

START

DEPENDENCIES: Preliminary cost estimate from Preconstruction.

DISTRIBUTION AND USE: Distributed with PMS reports and used to aid in planning funding schedules and cash forecasting.



ACTIVITY: Receive & Update Final Project Cost Data

DEFINITION: Preconstruction submits revised estimate of costs for quantities expected to be required to construct the planned project.

OUTPUT PROVIDED: PMS system reports with updated costs, and if necessary, adjustments to work plan schedule upon review of funding availability.

TASKS: Obtain 2nd cost estimate from Preconstruction and enter into systems as required.
Revise schedules as necessary upon review of available funding.

START DEPENDENCIES: Updated cost estimate from Preconstruction.

DISTRIBUTION AND USE: Distributed with PMS reports and used to aid in final decisions affecting project scheduling.



No. 200

ACTIVITY: Assign Area Engineer and
Develop Letter of Intent

DEFINITION: The Letter of Intent outlines the general project scope, alerts various entities a project is being initiated and starts the information gathering process to determine what concerns and impacts must be considered.

OUTPUT
PROVIDED: Letter of Intent

TASKS: Furnishes the Planning and Research Bureau two strip map prints and requests traffic data.
Secures aerial photography for the proposed project. The usual scale is 1" = 1,000'. However, in some instances 1" = 2,000' will be appropriate while on others 1" = 500' might be required.
Reviews the proposed project with the Impact Evaluation Unit and determines the alternate locations to be considered.
Gather, review and develop information to determine general project parameters.
Secure a distribution list from the Public Hearings Unit.
Prepare letter of intent.
Distribute letter of intent.

START
DEPENDENCIES: PR-1 documents.

DISTRIBUTION
AND USE: Distributes a letter of intent to the Action Plan participants, public, and public and private agencies that might have an interest in the project or the area affected. On projects where little outside input is anticipated, a news release will suffice in lieu of a letter of intent.



ACTIVITY: Develop and Distribute Location Planning Report

DEFINITION: Request, gather and develop information to define the project type, scope, and the process to be used for the projects' development.

OUTPUT PROVIDED: Location Planning Report

TASKS:

- Conducts a field review in company with the Supervisor, Division Construction Section, Supervisor, Field Right-of-Way Bureau, the FHWA Area Engineer and others as deemed necessary. The field review should cover, as a minimum, the following:
 - A. The alternate locations to be studied, project limits, and major design features.
 - B. The project design standards and opportunity for utilizing upgrading rather than complete reconstruction.
 - C. The potential environmental impacts of all alternates and a preliminary determination as to whether the project is a major or non-major action.
 - D. The extent of field survey or mapping to be authorized at this time.
- Prepares the Location Planning Report documenting the decisions made at the field review and requests FHWA or inhouse approval.
- Authorizes the Supervisor, Division Construction Section to proceed with the field survey and/or requests contour mapping from the Manager, Photogrammetry Unit.
- Furnishes the Chief, Preconstruction Bureau 14 copies of the Location Planning Report and 14 autoscreen prints for presentation to the Impact Evaluation Group.
- Schedules information public meetings if reaction to the letter of intent or other public input indicates there is a need.
- Furnishes the Right-of-Way Bureau a copy of the Location Planning Report and five autoscreen prints showing the approximate alternate locations being considered and requests:
 - A. Adjacent ownership plats with areas.
 - B. Right-of-Way cost estimates.
 - C. Narrative right-of-way reports.
 - D. Relocation cost estimates.
 - E. Narrative relocation reports.
 - F. Utility cost estimates and a report on major utility or railroad problems that would affect the location.



- G. Report on the alternates' anticipated social and economic impacts.
- H. Report on any possible 4(f) involvements.
- I. Report on any effects any of the alternates might have on minority groups or neighborhoods.
- J. Report on any possible utility conflicts that may come under the provisions of the Major Facilities Siting Act.

Furnishes the Environmental Unit a copy of the Location Planning Report and two autoscreen prints showing the approximate alternate locations being considered and request a report on fish and wildlife impacts.

Furnishes the Planning and Research Bureau a copy of the Location Planning Report and two autoscreen prints showing the approximate alternate locations being considered and requests a report on land use planning impacts and what, if any, access control will be included.

Furnishes the Department of Fish & Game two autoscreen prints showing the approximate alternate locations being considered and requests them from a statement indicating whether or not they have, or plan to acquire, lands that might be affected by any of the alternates, and if so, whether or not such lands might have present or planned 4(f) useage.

Furnishes the U.S. Forest Service, if their lands are involved, two autoscreen prints showing the approximate alternate locations being considered, and requests from them a statement indicating whether or not such lands have present or planned 4(f) useage.

Furnishes the Materials Bureau a copy of the Location Planning Report and two autoscreen prints showing the approximate alternate locations being considered and requests from them a report on any serious materials problems that might be encountered with any of the alternates.

Makes a preliminary check of noise levels and if it appears that noise levels on any of the alternates may exceed the allowable levels, furnishes the Traffic Design Unit a copy of the Location Planning Report and two autoscreen prints showing the approximate alternate locations being considered and requests from them a report on existing noise levels, at the noise-sensitive locations.

Furnishes the Hydraulics Unit a copy of the Location Planning Report and two autoscreen prints showing the approximate locations being con-



sidered and requests from them a report on any possible serious hydraulic problems that might be encountered.

Furnishes the Traffic Unit a copy of the Location Planning Report and two autoscreen prints showing the approximate locations being considered and requests from them a report on high accident locations, signalized intersections, lighting, school crossings, and any other traffic related problems that might be encountered.

Requests information from any other source that will aid in the development of the project.

Prepares cost estimates for the alternates being considered.

START

DEPENDENCIES: PR-1, Traffic information, photography.

DISTRIBUTION

AND USE:

The Location Planning Report has a wide in-house and FHWA distribution and is used as an approval process to define the project scope and intent.

It is also used as a tool to gather information from those agencies and units listed under the tasks which will be used to develop the environmental report.



ACTIVITY: Develop Categorical Exclusion, Draft Environmental Assessment/Draft EIS. (Develop Environmental Assessment)

DEFINITION: Develop appropriate final or draft Environmental Document.

OUTPUT

PROVIDED: Categorical Exclusion, Draft Environmental Assessment or/Draft EIS.

TASKS: Receives, summarizes, and analyzes all available data. Develops Categorical Exclusion, Environmental Assessment or Draft EIS.
 A. If the analysis indicates that the proposed project will not significantly affect the quality of the human environment, develop a Categorical Exclusion.
 If the analysis indicates the Project may have significant Environmental Impacts:
 Develops a draft Environmental Assessment or Environmental Assessment/Section 4(f)
 Statement from the previously prepared PER.
 Transmits the draft Environmental Assessment or combined Environmental Assessment to the FHWA, Right-of-Way Bureau, and the Environmental Unit for comments and suggestions.
 Receives comments and suggestions and finalizes the draft Environmental Assessment or combined Environmental Assessment/Section 4(f) Statement.

START

DEPENDENCIES: Input - From State and Federal Agencies and Public via letter of intent, scoping, and Public involvement meetings.
 - From Environmental Impact Group
 Environmental Unit Members
 - From various studies and reports.

DISTRIBUTION AND USE:

FHWA, Bureau Chiefs, and Public Hearings Unit.
 Used to document and identify major impacts on the environment to be considered in the final environmental document.



ACTIVITY: Develop Final Environmental Document.

DEFINITION: Finalize and secure approval of
FONSI or FONSI/4(f);
or EIS or EIS/4(f)

OUTPUT
PROVIDED: Approved final Environmental Document.

TASKS: Develops the final FONSI-EIS; or combined
FONSI-EIS/Section 4(f) Statement.
Secure signature on two copies of the FONSI-EIS
or combined FONSI-EIS/Section 4(f) Statement
and transmits to the Federal Highway
Administration.
Receives approved copy of the Section 4(f)
Statement from the Federal Highway
Administration.
Distributes the FONSI-EIS or combined FONSI-EIS
Section 4(f) Statement to the appropriate
agencies and organizational units.

START
DEPENDENCIES: Location Study Report
Public Hearng
Draft Environmental of document completion of
Environmental Studies.

DISTRIBUTION
AND USE:

- A. External Distribution:
 - U.S. Coast Guard (1 copy)
 - Clearinghouse (1 copy)
 - Department of Fish & Game (2 copies)
 - State Environmental Quality Council (2 copies)
 - Dept. of National Resources and Conservation
(2 copies)
 - Student Environmental Research Center (1 copy)
- B. Internal Distribution:
 - Mail and File (Signed Original)
 - Public Hearings Unit (1 copy)
 - Division Construction Section (1 copy)
 - Right-of-Way Bureau (1 copy)
 - Location & Road Design Section (1 copy)
 - Environmental Unit (1 copy)

Used to document and inform concerned of the
major environmental impacts and mitigation
measures included in the project.



ACTIVITY: Location Approval.

DEFINITION: Secure Location Approval.

OUTPUT PROVIDED: Location Approval.

TASKS: Presents the project to the Director of Highways and the Highway Commission for approval by the Director and concurrence by the Commission. Completes the "Location (or Location and Design) Study Report" and transmits it to the Federal Highway Administration requesting approval. Publishes notice of request for approval. Receives approval from the Federal Highway Administration or the Engineering Division. Publishes notice of receipt of approval. Authorizes the Supervisor, Division Construction Section, to proceed with whatever additional field survey is necessary to accomplish the design.

START DEPENDENCIES: Public Hearings Transcript. Approved Environmental Document.

DISTRIBUTION AND USE: To Bureau Chiefs
Legal Notices are placed in various newspapers.
Used to document completion and results of the Location process.



ACTIVITY: Distribute Survey Information and Request Design Input.

DEFINITION: Assembling of basic design data required to initiate design.

OUTPUT PROVIDED: The basic information required for design.

TASKS: Designer transmits the field drainage recommendations and Form HYD 1 for major drainage installations to the Hydraulics Unit and request drainage recommendations by a specific date.

Designer transmits prints of the Form HYD 1, survey notes and other data pertinent to bridge design to the Bridge Bureau.

Designer transmits sketch map and requests traffic data on the project by a specific date from the Planning Bureau.

Designer transmits existing data on special soils or materials and requests recommendations by a specific date from the Materials Bureau.

Designer transmits pertinent data and requests cost estimates on special problems by a specific date from the Right of Way Bureau.

Designer requests that the Traffic Unit provide planning report data on lighting, signals, school crossings, etc., by a certain date.

Designer requests, receives and verifies the ground line reduction printout.

Designer requests the receipt of approved structural surfacing sections for the project by a specific date from the Surfacing Unit.

Designer transmits Blue Line copy of map with centerline and cross section data to Photogrammetry.

START

DEPENDENCIES: PE Program
Survey Information
Location Approval

DISTRIBUTION AND USE: This basic design information is incorporated into preliminary plan development.



ACTIVITY: Prepare Plan and Profile Sheets.

DEFINITION: Preparation of title sheet and plan and profile sheets. This includes checking for completeness and accuracy.

OUTPUT PROVIDED: Title sheet and plan and profile sheets with topography and groundline profile to be used throughout the development of final plans.

TASKS: Designer assigns crew to check survey notes and develops title sheet master.
Designer requests the Tracing Crew to trace the hardshell data onto linens by a specific date.
Tracing Crew completes the hardshell tracing and transmits linens to the design crew on or before the scheduled date.
Designer checks linens against survey notes.

START

DEPENDENCIES: Survey information.

DISTRIBUTION AND USE: Distributed to Right of Way crew and Environmental and Landscape Unit.



ACTIVITY: Prepare Design Planning Report.

DEFINITION: Initial project inspection to insure agreement on design items and scope of work, and to furnish any additional design criteria. Representatives generally include Area Engineer, Supervisor-Division Construction Section, Road Designer, Hydraulics Designer, FHWA representative for Interstate projects, municipal representative for Urban projects, county representative for Secondary projects.

OUTPUT
PROVIDED:

Planning Report defining scope of work, design criteria to be used, and any special features. This is used for preliminary project development.

TASKS:

Designer and Area Engineer conduct a field review of the project, if the terrain and project conditions dictate.
Designer and Area Engineer develop a planning report including the following design criteria for the mainline, land service features and other special features of a project, as appropriate:

- a. Traffic characteristics
- b. Design speed
- c. Maximum degree of curvature
- d. Staked and projected centerline characteristics
- e. Slope design
- f. Ditch widths
- g. Typical section characteristics
- h. Location of special features
- i. Existing utility services
- j. Description of anticipated special features
- k. Summary of available special data including soils exploration, geology and water reports
- l. Preliminary right of way considerations
- m. Major hydraulic considerations including the type of pipe to be used
- n. Proposed access control features
- o. Design features to reduce noise
- p. Proposed lighting, signal, school crossing and railroad crossing treatment
- q. Joint use for community and/or minority benefits
- r. Construction traffic control measures



TASKS:

Area Engineer transmits the planning report to the Chief - Preconstruction Bureau (FHWA for Interstate projects) with copies indicated below and requests comments by a specific date.

- a. Administrator, Engineering Division
- b. Supervisor, Division Construction Section
- c. Chief, Right of Way Bureau
- d. Supervisor, Engineering Specialties Section
- e. Other parties affected by the project

Area Engineer coordinates and acts on any comments received and redistributes if changes in the planning report are required. If no comments requiring changes are received, the planning report stands approved as distributed and the design proceeds accordingly.

START

DEPENDENCIES: Assembly of basic design data.

DISTRIBUTION

AND USE:

Recommendations are incorporated into preliminary design development.

Planning Report is distributed to:

- Chief, Preconstruction Bureau
- Administrator, Engineering Division
- Supervisor, Div. Construction Section
- Chief, Right of Way Bureau
- Supervisor, Engineering Specialties Section
- Other parties affected by project.



ACTIVITY: Prepare Preliminary R/W Plans.

DEFINITION: Preparation of preliminary right of way plans to identify ownerships and properties for right of way acquisition.

OUTPUT PROVIDED: Preliminary R/W Plans

TASKS: Designer furnishes the linens to the Right of Way crew for preparation of the preliminary right of way plans.
Right of Way crew prepares the preliminary right of way plans and adds the section lines, quarter lines and sixteenth lines.
Right of Way crew transmits the first set of right of way plan brownlines to the Right of Way Bureau for their use in securing title information.

START

DEPENDENCIES: Plan and profile sheets and any pertinent road design data.

DISTRIBUTION AND USE: Used to identify right of way acquisition needs for the preliminary plan-in-hand. Brownlines are sent to the Right of Way Bureau for their use in securing title information.



START

DEPENDENCIES: Approved Design Planning Report Plan and Profile
Sheets with topography and groundline.

DISTRIBUTION

AND USE: Used to prepare cost estimate for Preliminary Plan
in Hand.
Distributed to Preliminary Plan in Hand Committee.



- ACTIVITY:** Establish Preliminary Alignment, Grade and R/W Plans.
- DEFINITION:** Preparation of preliminary roadway grades, earthwork quantities, miscellaneous notes, and other descriptions on the plan and profile sheets for the Preliminary Plan-in-Hand.
- OUTPUT PROVIDED:** Preliminary plans.
- TASKS:**
- Designer initiate and assigns personnel to perform the following preliminary design:
 - a. Establishes major control points
 - b. Establishes preliminary plan profile for any special features
 - c. Establishes preliminary grade and alignment of the mainline
 - d. Accomplishes preliminary earthwork runs on the project to achieve near optimum grade and alignment
 - e. Establishes the preliminary typical sections based on approved structural surfacing sections
 - Designer requests aid from the Geometric Crew in the Traffic Unit on special traffic considerations for any special features.
 - Designer furnishes preliminary construction limits to Right of Way Crew Chief for addition to right-of-way plans.
 - Area Engineer transmits the proposed grade line and preliminary typical section to the Bridge Bureau and requests the receipt of preliminary bridge ends by a specific date.
 - Area Engineer requests right of way to develop control of access resolution for Commission action if project includes access control.
 - Designer initiates the development of road design plans including the following:
 - a. Cross sections
 - b. Typical sections of mainline and special features
 - c. Mass diagram
 - d. Preliminary special provisions
 - e. Preliminary plan and profile sheets
 - f. Proposed access features
 - g. Preliminary grading frame
 - h. Title sheet
 - i. Preliminary linear data frame
 - j. Preliminary geometric layouts of special features
 - k. Preliminary right-of-way plans



ACTIVITY: Preliminary Plan-in-Hand Inspection.

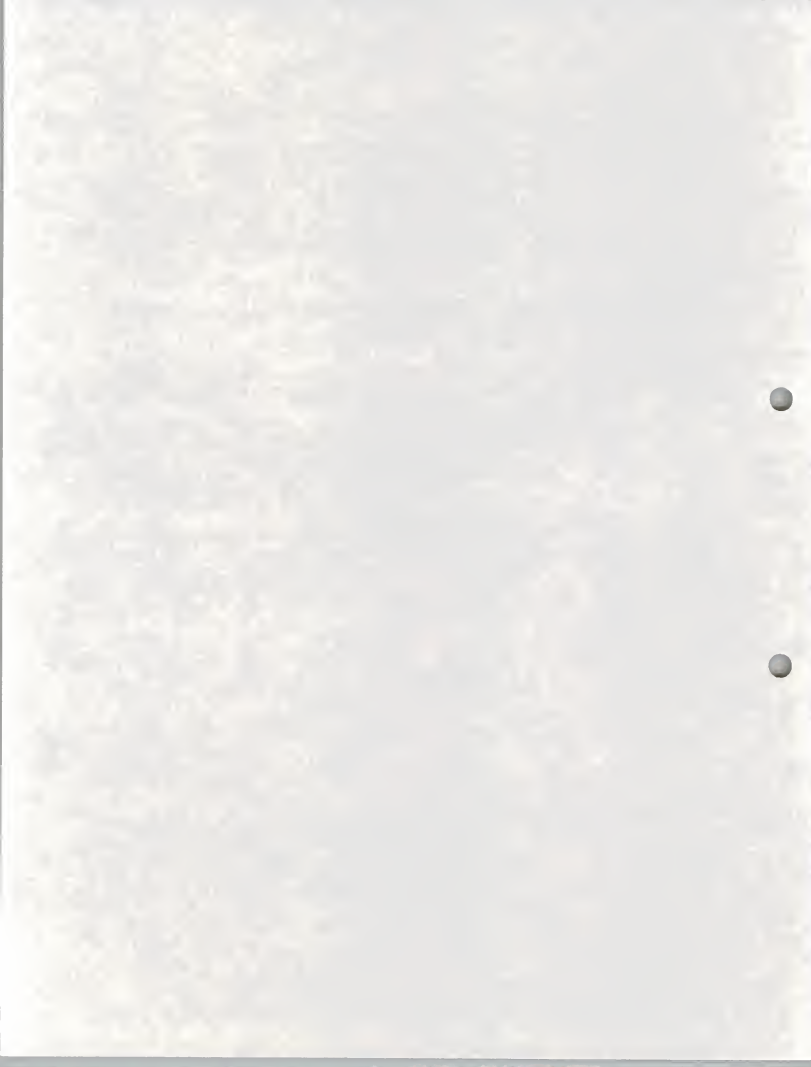
DEFINITION: Inspection to establish the final grade and line, drainage design and review of the overall project design. The plan-in-hand usually includes the same representatives as at the Field Review plus other involved parties (Fish, Wildlife and Parks, Traffic, Right of Way, Materials), depending upon the type of project and the extent of their involvement.

OUTPUT

PROVIDED: Final horizontal and vertical alignment and field review of design details.
Preliminary Plan-in-Hand Report.

TASKS:

- Designer prepares the plans and related information for the preliminary plan-in-hand inspection.
- Area Engineer receives the required prints of the preliminary right of way plans for the preliminary plan-in-hand inspection.
- Area Engineer develops the cover letter setting the proposed date for the preliminary plan-in-hand and distributes prints of plans and related information.
- Area Engineer conducts the office and field review of the preliminary plan-in-hand plans and obtains decisions on the following items in sufficient detail to prepare final plans:
- a. Alignment
 - b. Grade
 - c. Typical section
 - d. Ditch widths
 - e. Backslope
 - f. Shrink and/or swell factors
 - g. Grading quantities
 - h. Borrow pit locations
 - i. Special treatments for sub-excavation, surcharge, underdrains and unusual materials or soils conditions.
 - j. Location and geometric layout for special features
 - k. Separations
 - l. Location, grade, alignment and typical sections for frontage roads
 - m. Major irrigation and drainage features
 - n. Major land service features
 - o. Traffic Control Plan
 - p. Gravel sources
 - q. Connection to PTW



- r. Construction and right of way project length characteristics
- s. Layout of structures
- t. IG splits
- u. Estimated unit bid prices for grading, drainage, surfacing, guardrail and right-of-way estimate
- v. Approach surfacing depths
- w. Types of material to be used for guardrail, guardrail posts, pipes, culverts and fences.
- x. Erosion control features
- y. Type of excavation to be used for culverts, pipes, etc.

Designer prepares the preliminary plan-in-hand report documenting decisions made and further studies agreed upon during the preliminary plan-in-hand inspection

Area Engineer distributes the preliminary plan-in-hand report and requests approval from the Chief-Preconstruction Bureau (FHWA for interstate projects) and comments by a specific date from the following:

- a. Administrator, Engineering Division
- b. Supervisor, Div. Const. Section
- c. Other affected internal Sections and Units
- d. Other affected public agencies

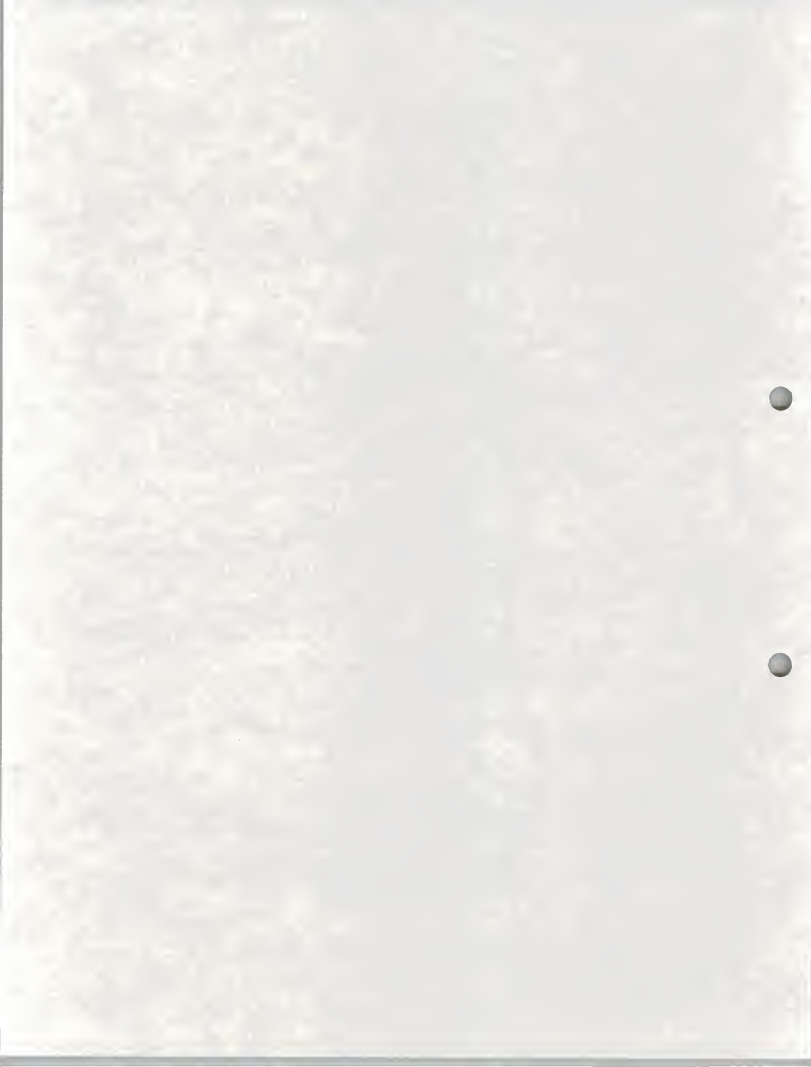
Area Engineer receives comments and approval of the preliminary plan-in-hand report, amends the report, if required, and redistributes

Designer requests in writing special studies agreed upon at the preliminary plan-in-hand by a specific date from any one or combination of the following:

- a. Right-of-Way Bureau
- b. Materials Bureau
- c. Bridge Bureau
- d. Traffic Unit
- e. Division Construction Section
- f. Hydraulics Unit
- g. Surfacing Unit
- h. Environmental Unit
- i. Other Public Agencies

Designer requests borrow site information and pit reclamation plan by a specific date from the Division Construction Section

Area Engineer obtains department decisions on minor problems from the Supervisor - Location and Road Design Section.



Area Engineer receives pertinent data, develops potential solutions for major problems and obtains department approval from the Administrator - Engineering Division.

Designer requests the landscape and beautification layouts and seeding recommendations by a specific date from the Environmental Unit

Designer transmits to the Project Control Unit an estimate of the cost of the project based on unit price recommendations received from the Division Construction Section.

START

DEPENDENCIES: Prepared plans and cost estimate quantities for Preliminary Plan-in-Hand.

DISTRIBUTION
AND USE:

Used to begin final project design.
Preliminary Plan-in-Hand Reports are distributed to:

Chief, Preconstruction Bureau
Administrator, Engineering Division
Supervisor, Division Construction Section
Other affected internal Sections and Units
Other affected public agencies.



ACTIVITY: Secure Design Approval.

DEFINITION: Approval to complete construction plans, right-of-way plans, specification, estimates, and to proceed with right-of-way acquisition.

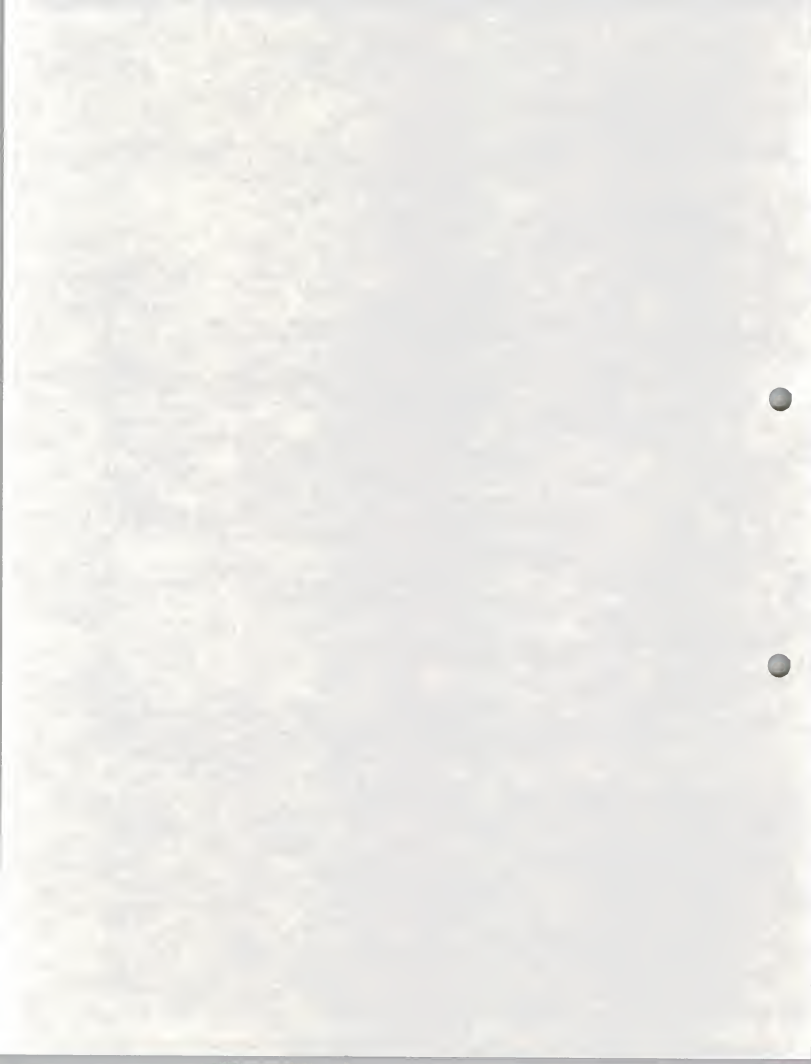
OUTPUT
PROVIDED: Design Planning Report.
Approval to complete design package.

TASKS: Area Engineer requests recommendations on alternatives from County Commissioners for secondary projects and from TAC for urban projects.
Area Engineer submits recommendations to the Administrator, Engineering Division.
Administrator, Engineering Division presents the hearing to the Director of Highways and the Highway Commission for approval by the Director and concurrence by the Commission.
Area Engineer completes the design study report and transmits it to the Administrator, Engineering Division (FHWA for interstate projects) requesting design approval. Sends Design Study Report to Forest Service if involved.
Manager, Public Hearing Unit publishes notices of request for design approval in appropriate news media.
Area Engineer receives design approval.
Manager, Public Hearing Unit publishes notice of receipt of design approval.

START

DEPENDENCIES: Draft Design Study Report.
Public Hearing Transcript.

DISTRIBUTION
AND USE: Notice of receipt of Design Approval is published in the newspapers of the locality of the project. Design approval is required to receive Right-of-Way Program for acquisition of right-of-way.



ACTIVITY: Determine Final Construction Limits

DEFINITION: Advancement of design and construction plans so that the final construction slope limits have been determined.

OUTPUT PROVIDED: Plotted construction slope limits.

TASKS: Area Engineer prepares airport submittal and requests airport clearance from the Federal Highway Administration for all projects near airports.

Designer initiates final design and assigns personnel to perform the following design, as required:

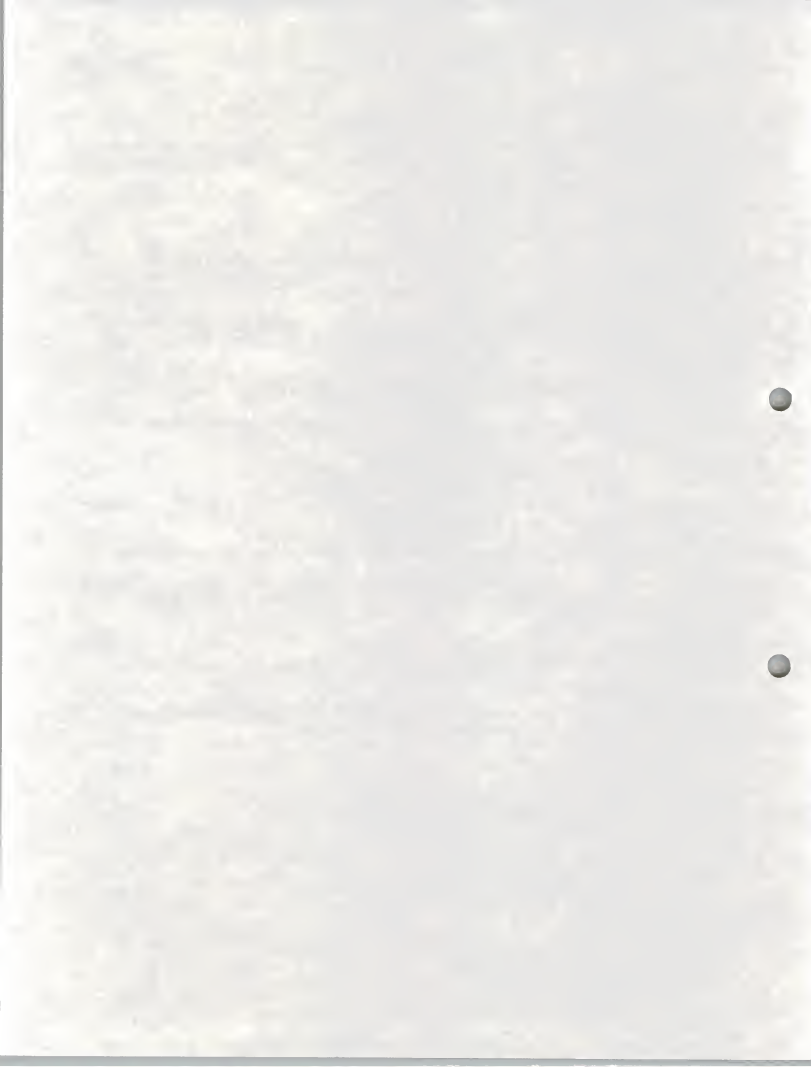
- a. Plot and template cross-sections
- b. Tie geometrics of mainline and special features
- c. Establish final grade and alignment of the mainline and special features
- d. Contour grading
- e. Field entrance design
- f. Road approach design
- g. Final earthwork runs based on final alignment and grade
- h. Mass diagram
- i. Special provisions associated with the design

Designer requests the receipt of structure layouts by a specific date from the Bridge Bureau.

START

DEPENDENCIES: Preliminary Plan-in-Hand.
Receipt of Design data from other Departments.

DISTRIBUTION AND USE: Plotted construction limits are provided to the right-of-way crew.



ACTIVITY: Preparation of R/W Plans for Second Brownline Submittal.

DEFINITION: Updating of right-of-way plans for Final Plan-in-Hand and submittal of second set of brownlines to the R/W Bureau for R/W estimate and programming.

OUTPUT PROVIDED: R/W plans for Final Plan-in-Hand.
Second set of brownlines for R/W programming.

TASKS: Designer furnishes construction limits to the Crew Chief, Right-of-Way Crew and advises him of the approximate date that the right-of-way plans should be ready for final plan-in-hand distribution.
Right-of-Way crew adds construction limits, proposed right-of-way requirements and whatever ownership data is available to the right-of-way plans.
Right-of-Way crew transmits the second set of brownline right-of-way plans to the Right-of-Way Section.

START

DEPENDENCIES: Preliminary Right-of-Way Plans.
Preliminary Plan-in-Hand.
Final Construction Limits.

DISTRIBUTION AND USE: Right of Way plans are distributed to Final Plan-in-Hand Committee.
Second set of brownlines is distributed to R/W Bureau.



ACTIVITY: Design Miscellaneous Features

DEFINITION: Design of the miscellaneous features required for a complete road construction project.

OUTPUT
PROVIDED: Design material to complete plans for Final Plan-in-Hand.

TASKS: Designer initiates the design of miscellaneous features and assigns personnel to perform the following as required:

- a. Develop linear and level data sheet
- b. Determine topsoil requirements
- c. Seed and mulch design
- d. Retaining wall (standard) design
- e. Removal and reset features design
- f. Adjustments to grade design
- g. Sidewalk design
- h. Curb and gutter design
- i. Concrete slope protection design
- j. Guardrail design
- k. Embankment protector design
- l. Bituminous curb design
- m. Cattleguard design
- n. Culvert and irrigation design
- o. Ditch block design
- p. Project markers and monuments design
- q. Noise barrier design
- r. Plot topography on cross-sections
- s. Check construction limits on right-of-way lines

START

DEPENDENCIES: Preliminary Plan-in-Hand.
Receipt of design data from other Departments.

DISTRIBUTION
AND USE: Used to prepare plans for Final Plan-in-Hand.



ACTIVITY: Final Plan-in-Hand Inspection.

DEFINITION: Final field inspection to review completed plans. Scheduled to insure plan completion in conformance with past inspections and to receive recommendation on any unresolved items.

OUTPUT

PROVIDED: Final field inspection of completed plans and the Final Plan-in-Hand Report documenting decisions made at the field inspection.

TASKS: Designer prepares the plans and related information for the final plan-in-hand inspection including the following items:

- a. Plan and profile sheets
- b. Title sheet
- c. Materials quantities and summary frames
- d. Typical sections
- e. General notes sheet
- f. Linear and level data sheet
- g. Detail sheets
- h. Special provisions
- i. Cross-sections
- j. Right-of-way plans

Area Engineer develops the cover letter setting the proposed date for the final plan-in-hand and distributes prints of plans and related information.

Area Engineer conducts the office and field reviews of the final plan-in-hand plans and obtains decisions on the following items:

- a. Drainage
- b. Guardrail
- c. Fencing
- d. Final right-of-way widths
- e. Irrigation facilities
- f. Slope protection and erosion control features
- g. Topsoiling
- h. Channel change
- i. Riprap
- j. Special provisions
- k. Seeding and mulch
- l. Noise barriers
- m. Other miscellaneous design features
- n. Traffic Control Plan
- o. Disposal of existing bridges
- p. Mitigation measures called for in environmental document



Designer prepares the final plan-in-hand report documenting decisions made and further studies agreed upon during the final plan-in-hand inspection.

Area Engineer distributes the final plan-in-hand report and requests approval from the Chief, Preconstruction Bureau (FHWA for interstate projects) and comments by a specific date from the following:

- a. Administrator, Engineering Division
- b. Supervisor, Division Construction Section
- c. Other affected internal Sections and Units
- d. Other affected public agencies

Area Engineer receives comments and approval of the final plan-in-hand report, amends the report, if required, and redistributes.

Designer requests in writing special studies agreed upon at the final plan-in-hand to be conducted by a specific date from any one or combination of the following:

- a. Right-of-Way Bureau
- b. Materials Bureau
- c. Bridge Bureau
- d. Traffic Unit
- e. Division Construction Section
- f. Hydraulic Unit
- g. Surfacing Unit
- h. Environmental Unit
- i. Other public agencies

Area Engineer obtains Department decisions on minor problems from the Supervisor, Location and Road Design Section.

Area Engineer receives the pertinent data, determines the potential solution for major problems and obtains Department approval from the Administrator, Engineering Division.

Area Engineer requests Planning Bureau to furnish their recommendations on type of railroad crossing signals that are warranted.

Designer receives the unit price recommendations from the Division Construction Section and prepares an updated cost estimate.

Designer transmits the updated cost estimate to the Project Control Unit.

START

DEPENDENCIES: Revised plans from Preliminary Plan-in-Hand.
Right-of-Way Plans with final construction limits,
proposed right-of-way requirements and the available ownership data.



DISTRIBUTION
AND USE:

Used to assure design criteria has been met and
incorporated into plans.

Final Plan-in-Hand Reports are distributed to:

Chief, Preconstruction Bureau
Administrator, Engineering Division
Supervisor, Division Construction Section
Other affected internal Sections and Units
Other affected public agencies



ACTIVITY: Preparation of Final R/W Plans.

DEFINITION: Preparation of final Right-of-Way Plans to identify property ownership and need for right-of-way acquisition and utility moves.

OUTPUT PROVIDED: Final Right-of-Way Plans.
Utility Plans.

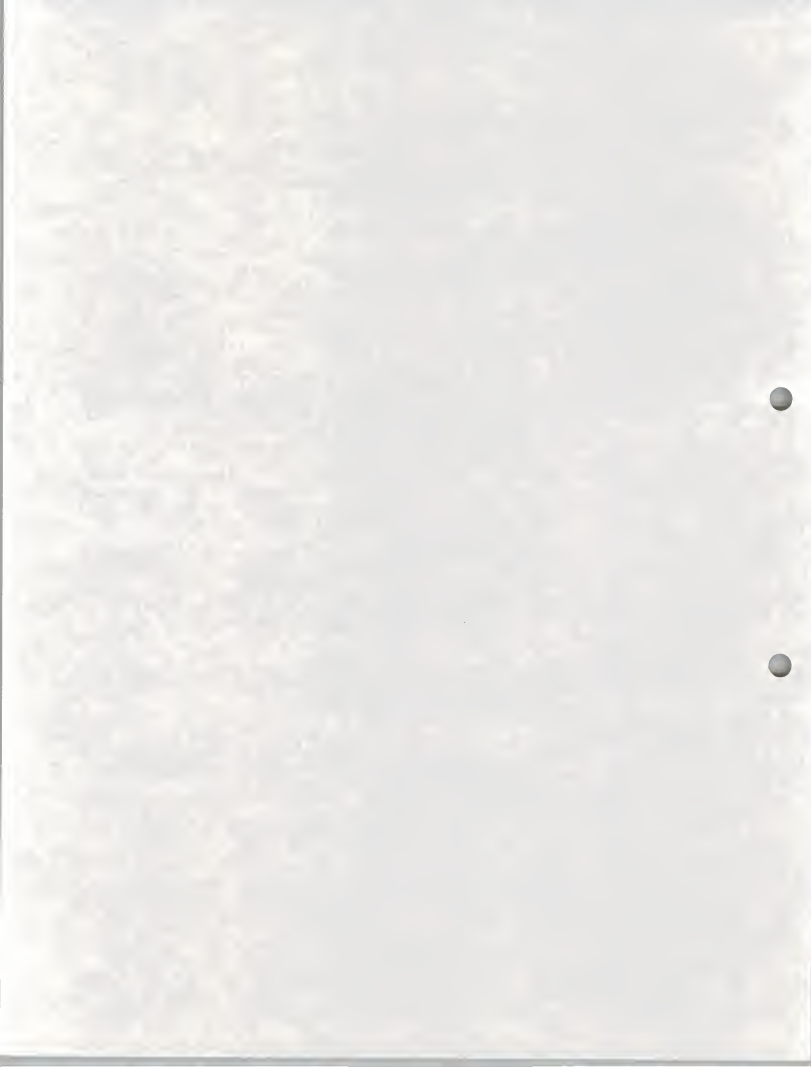
TASKS:

- Designer updates and revises control of access features, construction limits and irrigation design.
- Designer furnishes revised construction limits to the Crew Chief, Right-of-Way Crew, for modifications and completion of right-of-way plans and the preparation of utility plans.
- Right-of-Way Crew completes the right-of-way plans and transmits them to the Right-of-Way Bureau. Subsequent plan changes shall be processed through the R/W Bureau before inclusion in the plans.
- Right-of-Way Crew prepares the utility plans and transmits appropriate utility plans, construction plans and cross-sections to the R/W Bureau for all utilities and railroads involved.
- Area Engineer furnishes the R/W Bureau information showing the required borrow sources and requests that they be optioned.
- Area Engineer furnishes the R/W Bureau information relative to the railroad involvement.

START

DEPENDENCIES: Final Plan-in-Hand right-of-way plans.
Revised control of access features, construction limits and irrigation design.

DISTRIBUTION AND USE: Used to negotiate and purchase right-of-way, develop final utility plans, and for condemnation proceedings.



ACTIVITY: Final Design

DEFINITION: Completion of final design package, (including construction plans, special provisions, traffic control plan, and cross-sections).

OUTPUT PROVIDED: Completed design package for checking.

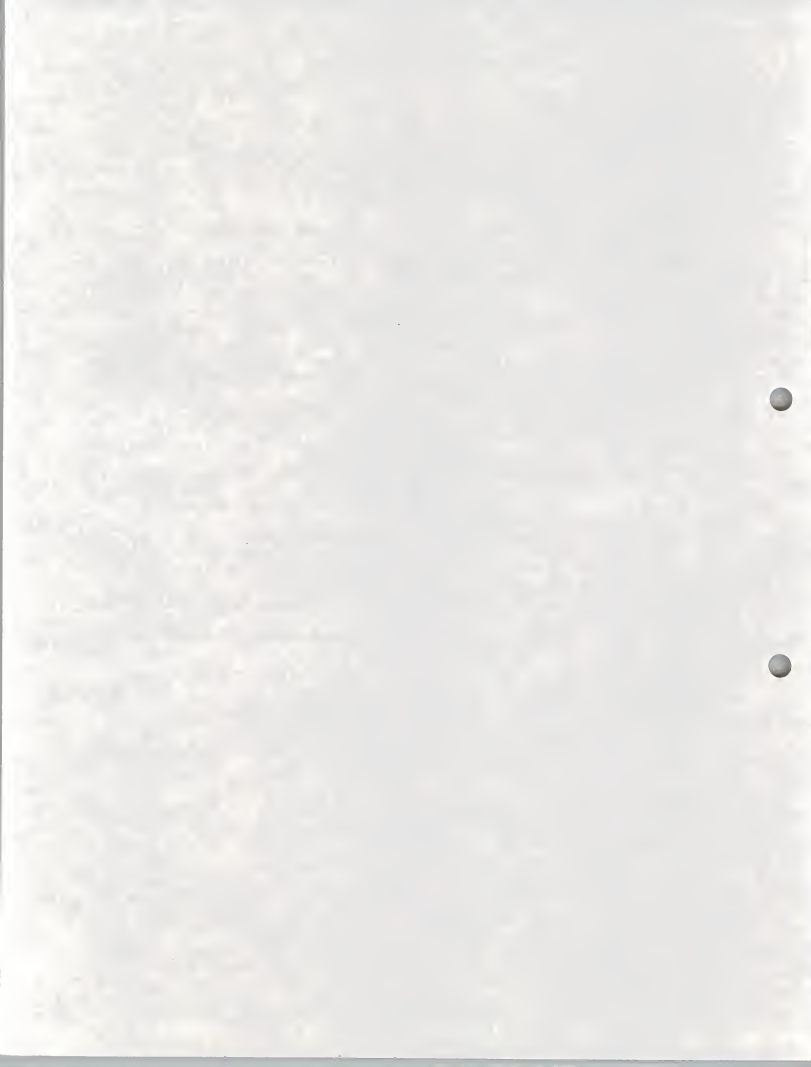
TASKS:

- Area Engineer sends reclamation plans for those borrow pits that are optioned to the Environmental Unit and requests that they obtain necessary approval from State Lands.
- Designer updates and revises special provisions and miscellaneous design as required by acquisition arrangements and requests from the R/W Bureau. Adds right-of-way limits to construction plans.
- Designer drafts Traffic Control Plan.
- Designer requests the final tracing and inking of the construction plans by a specific date from the Tracing Crew.
- Tracing Crew completes the tracing and inking of construction plans within the scheduled dates.
- Designer checks the plans for adequacy and accuracy.
- Designer furnishes the construction plans, cross-sections, special provisions Traffic Control Plan and project file to the checker.
- Area Engineer furnishes two sets of plans and special provisions to the Forest Service, if involved.
- Right-of-Way Crew furnishes utility plans to checker.

START

DEPENDENCIES: Final Plan-in-Hand Inspection.
Receipt of special studies required from other Sections, Units, or Public Agencies.
Departmental decisions on any unresolved problems after Final Plan-in-Hand.

DISTRIBUTION AND USE: Distributed to Road Plan Checker for final checking.



ACTIVITY: Check Plans.

DEFINITION: Final design check of completed plans and quantities. Performed by Road Plans Checker to insure conformance to past project inspections, recommendations, departmental policy, and design guidelines.

OUTPUT PROVIDED: Verified final plans.

TASKS: Checker reviews and checks the project design, construction plans and associated data. Adds borrow pit reclamation plans to contract package.
Designer modifies and changes the construction plans, cross-sections and special provisions, as required.
Checker transmits the construction plans and associated data to the Contract Plans Section. Sends one set of prints of the plans to the Division Construction Supervisor and request an estimate of the traffic control quantities.

START

DEPENDENCIES: Receipt of complete design package from designer.

DISTRIBUTION AND USE: Distributed to the Contract Plans Section for preparation of P.S. & E package.



ACTIVITY: Obtain Preliminary Aerial Photo

DEFINITION: The A.E. coordinates his data needs and requests available mapping. The Photogrammetric Unit in turn provides any available mapping pertinent to conducting preliminary studies.

OUTPUT

PROVIDED: Preliminary aerial photos or maps suitable for design of aerial flight lines and target control layout.

TASKS: Research of photogrammetry or map files.
Possible flights to obtain aerial photography.

START

DEPENDENCIES: A.E. assignments or request.

DISTRIBUTION

AND USE: Aerial photos are used to conduct studies to develop preliminary data for review by the location study team, and Photogrammetric Unit, should new aerial photos be required for mapping. To be used to plan flight line and control schemes.



ACTIVITY: Horizontal Target Control.

DEFINITION: Placement of horizontal target controls in the field for mapping.

OUTPUT
PROVIDED: Visible markings of horizontal field controls to be recorded by aerial photography.

TASKS: Flight line and control schemes are prepared.
Targets placed in the field at control locations.

START

DEPENDENCIES: Area engineer assignment as to map requirements, limits, scale. Favorable solar season.

DISTRIBUTION
AND USE: Used to develop horizontal requirements for photogrammetric mapping. It maintains scale, bearing and land ties to mapping. It provides a base for future horizontal field survey.



ACTIVITY: Aerial Photography.

DEFINITION: Fly and process aerial photography.

OUTPUT
PROVIDED: Aerial Photos.

TASKS: Load photo camera and mount in photo plane.
Fly project and expose film over given photo base-
line targets.
Process exposed film and check tolerance.
Provide glass plates on request.

START

DEPENDENCIES: Placement of field control targets by
Photogrammetric Unit.

DISTRIBUTION
AND USE: Used to develop photogrammetry survey data and
field survey data.



ACTIVITY: Elevation Image Control

DEFINITION: Marking of selected elevation photo image points in the field for mapping.

OUTPUT PROVIDED: Visible field marks to photo image elevation controls.

TASKS: Select photo image points to fit elevation control scheme. Mark selected elevation control locations in the field. Field survey request and preparation.

START DEPENDENCIES: Placement of horizontal target controls and aerial photography of the mapping project.

DISTRIBUTION AND USE: Used to develop elevation requirements for photogrammetric mapping. It provides field verification of selected image points and a base for future elevation field survey.



ACTIVITY: Photogrammetry Mapping Data.

DEFINITION: Preparation of photogrammetry mapping data.

OUTPUT
PROVIDED: Photogrammetry data. Map compilations and field survey ground control check.

TASKS: Finalize map limits with Area Engineer.
Prepare photo prints and glass plates.
Analytical bridge and data processing.
Confirmation of field survey work.
Layout manuscripts (control plotting).
Stereo plotting and ink drafting of map.
Finalizing (title blocks, white prints, store original).
Deliver white prints of map to Area Engineer.
Photogrammetric cross sections established on cards and delivered to Area Engineer on request.

START

DEPENDENCIES: Established horizontal and vertical survey.
Aerial photography (glass plates).

DISTRIBUTION
AND USE: Checked and distributed to all the sections that will require the information obtained.



ACTIVITY: Photogrammetric Cross-Sections.

DEFINITION: Photogrammetric cross-sections.

OUTPUT
PROVIDED: Recorded cross-section measurements.

TASKS: Photogrammetric measurements and recording of
selected terrain cross-sections.

START
DEPENDENCIES: Request from A.E. with map showing center line and
cross-section locations and limits.

DISTRIBUTION
AND USE: Submit to A.E. data processing cards for earth
work evaluations.



ACTIVITY: Assemble Preliminary Drainage & Irrigation Information

DEFINITION: Assembly of available drainage and irrigation data, identify irrigation systems and perform field reviews.

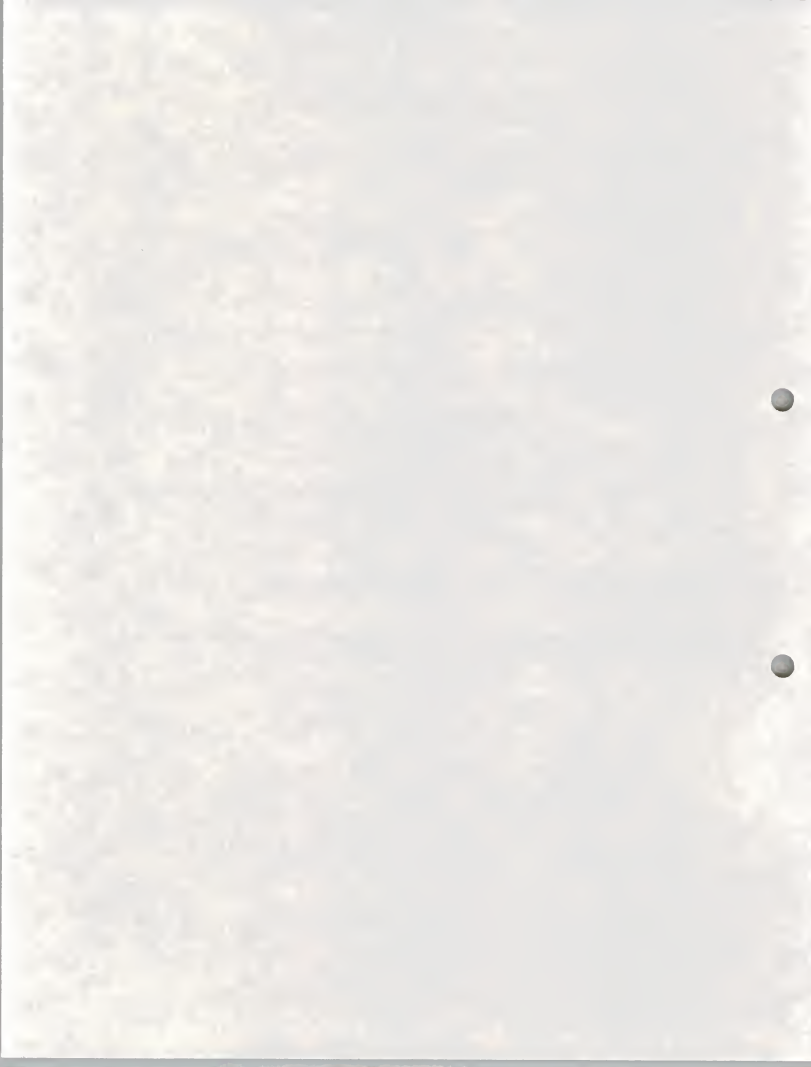
OUTPUT PROVIDED: Preliminary drain and irrigation information to aid in preparation of Location Hydraulic Study Report.

TASKS:

- (1) Identify headwaters of streams and wetlands.
- (2) Identify floodplain involvement, if any.
 - (a) Delineated
 - (b) Floodprone
 - (c) Regulatory Agencies
- (3) Research available data (i.e. files, As-built plans, aerial photographs, quad. maps etc.)
- (4) Locate existing structures.
- (5) Research canal or ditch data via "Water Resource Surveys".
- (6) Attend field reviews when necessary.

START DEPENDENCIES: Letter of Intent or EIU notification.

DISTRIBUTION AND USE: Assembled to aid in preparation of Location Hydraulic Study Report.



ACTIVITY: Compile Drainage Basin Parameters

DEFINITION: To identify and delineate drainage basin parameters.

OUTPUT PROVIDED: Basin parameters.

TASKS:

- (1) Determine areas.
- (2) Determine longest thread.
- (3) Determine average channel slope.
- (4) Determine mean annual precipitation.
- (5) Determine forest cover index.
- (6) Determine mean basin elevation.
- (7) Determine basin high elevation.
- (8) Determine temperature index.
- (9) Determine site latitude and longitude.
- (10) Determine mean channel length.
- (11) Determine % basin covered by lakes and ponds.
- (12) Determine storage capacity upstream.

START

DEPENDENCIES: Assemble project drainage information.

DISTRIBUTION AND USE: Compute runoff.



ACTIVITY: Prepare Location Hydraulic Study Report

DEFINITION: Evaluation and discussion of practicability of alternatives to any encroachments (longitudinal or otherwise); serious hydraulics problems and involvement with regulatory programs.

OUTPUT PROVIDED: Recommendations concerning highway location alternatives.

TASKS:

- (1) Evaluation and discussion of:
 - (a) Risks associated with proposed action.
 - (b) Impacts on natural and beneficial floodplain values.
 - (c) Support of probable incompatible floodplain development.
 - (d) Measures to minimize floodplain impacts associated with action.
 - (e) Measures to restore and preserve natural and beneficial floodplain values impacted by the action.
- (2) Evaluation and discussion of practicability of alternatives.
- (3) Determine if proposed action will require involvement with existing and proposed regulatory and (floodplain) management programs.

START

DEPENDENCIES: Assemble drainage information.

DISTRIBUTION

AND USE: Used to provide recommendations regarding highway location alternatives.



ACTIVITY: Update Drainage and Irrigation Data

DEFINITION: Evaluation of field survey data, identification of possible problems not discovered in preliminary phase, and determination if additional data is required.

OUTPUT PROVIDED: Detailed compilation of existing and proposed site conditions and pertinent elevations.

TASKS:

- (1) Plot survey information.
- (2) Identify elevations above which there are risks associated with floodwaters.
- (3) Layout existing irrigation systems and determine existing uses and requirements.
- (4) Estimate allowable headwaters for use in determining structure requirements.
- (5) Write to Irrigation Districts.

START

DEPENDENCIES: Receipt of field survey data.

DISTRIBUTION AND USE: Used to aid in design of structure requirements.



ACTIVITY: Compute Runoff

DEFINITION: Determine preliminary flow quantities.

OUTPUT PROVIDED: Computed runoff from which to size structures.

TASKS: (1) Perform correlation regression analysis.
(2) Perform statistical analysis for gaged streams.

START

DEPENDENCIES: Compile drainage basin parameters.

DISTRIBUTION AND USE: This data is used to analyze floods, prepare reports, and begin sizing structures.



ACTIVITY: Analyze Floods

DEFINITION: Preliminary analysis of historic floods, potential flooding areas, actual flood sites, identify and recommend corrective measures, if feasible. (based on best estimates with data available.)

OUTPUT PROVIDED: Approximate magnitude and frequency of historic floods and recommended actions for potential flood situations.

TASKS:

- (1) Inspect flood site.
- (2) Survey flood limits.
- (3) Compute magnitude of historic flood.
- (4) Compute frequency of historic flood.
- (5) Analyze data.
- (6) Compute capacity of existing structures.
- (7) Review "Construction Division's" recommendations.
- (8) Correlate with "activity 358".
- (9) Recommend corrective measures.

START DEPENDENCIES: Assemble drainage information.

DISTRIBUTION AND USE: Used as input for computing runoff, preparation of study reports, and other flood design criteria.

ACTIVITY: Complete Preliminary Storm Drain Design

DEFINITION: Evaluate feasibility of contemplated storm drain.

OUTPUT PROVIDED: Report outlining feasibility of available options.

TASKS:

- (1) Evaluate storm drain involvement
 - (a) utilities
 - (b) outfall
 - (c) runoff
 - (d) contributing areas
- (2) Develop preliminary alternates.
- (3) Evaluate potential for upstream development which would contribute to system.

START

DEPENDENCIES: Field Survey data

DISTRIBUTION AND USE: Prepared for internal use and utilized to make recommendations regarding various proposals.



ACTIVITY: Size Drainage Structures

DEFINITION: Analyze and determine sizes and types of pipes, concrete box culverts, longspans, bridges etc. necessary on a project.

OUTPUT PROVIDED: Size and type of drainage structures.

TASKS:

- (1) Determine allowable headwaters.
- (2) Determine design headwaters.
- (3) Determine velocities.
- (4) Prepare cost estimates.
- (5) Compare alternates.
- (6) Assess risks.
- (7) Obtain additional survey data if required.
- (8) Analyze and select types of drainage structure and size required.
- (9) Review structural requirements (fill heights, etc.)

START

DEPENDENCIES: Compute runoff
Compute profiles

DISTRIBUTION AND USE: Used to compute special hydraulic requirements, study alternates, determine size requirements.



ACTIVITY: Compute Water Surface Profiles

DEFINITION: Compilation of data and computation of water surface profiles for selected waterway openings.

OUTPUT PROVIDED: Water surface profiles, hydraulic properties and plotted waterway openings.

TASKS:

- (1) Assemble site input data.
- (2) Calibrate and debug model.
- (3) Input and run alternate waterway openings.
- (4) Plot water surface profiles.
- (5) Evaluate differences among alternates.
- (3a) Input and run alternate longitudinal encroachments.

START DEPENDENCIES: Survey data compute runoff.

DISTRIBUTION AND USE: Used in conjunction with studying drainage alternates and determining waterway opening requirements.



ACTIVITY: Size Irrigation Structures

DEFINITION: Analyze and determine types and sizes of structures.

OUTPUT PROVIDED: Size and type irrigation structure required.

TASKS:

- (1) Determine design Q's.
- (2) Determine freeboard requirements.
- (3) Determine existing structure capacity and W.S. elevation.
- (4) Determine proposed structure capacity and W.S. elevation.
- (5) Determine velocities (ditch and structure)
- (6) Review "irrigation justification report".
- (7) Determine general layout for proposed system.
- (8) Prepare cost estimates.
- (9) Compare alternates.
- (10) Analyze and select required structures.

START

DEPENDENCIES: Assemble irrigation information.

DISTRIBUTION AND USE: Used to compute hydraulic requirements, study alternates, prepare submittals to regulating authority.



ACTIVITY: Prepare Preliminary Hydraulic Report

DEFINITION: Determination and recommendations regarding pertinent hydraulic/hydrologic data.

OUTPUT PROVIDED: Preliminary review and documentation.

TASKS:

- (1) Compile all information into report form.
 - (a) site data
 - (b) hydrologic analysis
 - (c) hydraulic analysis
 - (d) risk assessment evaluation
- (2) Review other hydraulic reports if available.
- (3) Submit hydraulic recommendations to Road Design and Bridge Bureau.

START DEPENDENCIES: Compute runoff
Size structures

DISTRIBUTION AND USE: Distributed to Road Design, Bridge, Division Construction, Right of Way as appropriate.



ACTIVITY: Revise & Update Hydraulic Recommendations

DEFINITION: Review of preliminary recommendations after preliminary plan-in-hand held.

OUTPUT PROVIDED: Revised recommendations, if required.

TASKS:

- (1) Review grade and alignment changes to see if revised hydraulic/hydrologic recommendations are required.
- (2) Recycle all previous activities/tasks that need to be updated.

START DEPENDENCIES: PPIH

DISTRIBUTION AND USE: Submit revised recommendations to Bridge and Road Design, if required.



ACTIVITY: Prepare Storm Drain Design

DEFINITION: Prepare necessary storm drain layout including appropriate appurtenances.

OUTPUT PROVIDED: Storm drain design.

TASKS:

- (1) Develop plans showing:
 - (a) existing ground lines
 - (b) proposed finished roadway grades
 - (c) type, size, spacing of inlets
 - (d) trunklines and grades
 - (e) outfalls
 - (f) sediment basin (if required)
- (2) Develop:
 - (a) runoff patterns
 - (b) compute runoff
 - (c) compute gutter capacities
- (3) Identify utility conflicts.
- (4) Prepare final storm drain report.
- (5) Prepare agreement outlining cities participation, if appropriate.

START

DEPENDENCIES: Typical sections
Establish grade and alignment

DISTRIBUTION AND USE: Incorporate into plans and review at final plan-in-hand inspection.



ACTIVITY: Determine Special Hydraulic Requirements

DEFINITION: Analysis of needs for special hydraulic facilities.

OUTPUT PROVIDED: Identification and specifications for special hydraulic requirements.

TASKS:

- (1) Analyze needs for:
 - (a) energy dissipators
 - (b) riprap protection
 - (c) channel changes
 - (d) drop structures
 - (e) spur dikes
 - (f) improved inlets
- (2) Prepare preliminary layouts and details.
- (3) Submit to Bridge Bureau for structural design as necessary.
- (4) Determine special requirements and preliminary details for storm sewer and irrigation facilities.

START DEPENDENCIES: Compute runoff
Size structures

DISTRIBUTION AND USE: Data used to complete study of drainage facility, and prepare estimate of special hydraulic requirements prior to final plan-in-hand.



ACTIVITY: Prepare, Submit and Coordinate Irrigation Details For Approval

DEFINITION: Preparation of details and design data for submittal to appropriate regulating authority.

OUTPUT PROVIDED: Regulating authority approval.

TASKS:

- (1) Prepare and submit details.
- (2) Coordinate and respond to inquiries.
- (3) Coordinate required detail and specification changes.
- (4) Submit recommendations to Bridge Bureau as required.

START

DEPENDENCIES: Size irrigation structures.

DISTRIBUTION AND USE: Submit to appropriate authority.



ACTIVITY: Prepare & Submit Regulatory Permits

DEFINITION: Preparation of 404 permits, floodplain permits, etc. regarding highway construction in regulated areas.

OUTPUT PROVIDED: Submittal of appropriate permits.

TASKS:

- (1) Compilation of all data showing nature, location, dimensions of existing and proposed structures and encroachments.
- (2) Assemble construction specifications for proposed construction.
- (3) Complete application forms.
- (4) Draw sketches.
- (5) Obtain information on proposed structure and method of construction.

START

DEPENDENCIES: FPIH
Bridge and drainage layouts.

DISTRIBUTION AND USE: Submitted to appropriate authority for approval.



ACTIVITY: Coordinate Approval of Regulatory Permits

DEFINITION: Regulating authority approval of a proposed structure (or encroachment) or method of construction.

OUTPUT PROVIDED: Permit

TASKS:

- (1) Coordinate and respond to permit application inquiries.
- (2) Coordinate required plan changes.
- (3) Write permit related special provisions.
- (4) Distribute permit upon receipt.

START DEPENDENCIES: Preparation and submittal of permit applications.

DISTRIBUTION AND USE: Required to complete the final plan revisions.



ACTIVITY: Revise, Update & Finalize Hydraulic Drainage Recommendation

DEFINITION: Review and revision of hydraulic drainage recommendations and preparation of necessary reports.

OUTPUT PROVIDED: Final review and documentation.

TASKS:

- (1) Prepare hydraulic data summary sheet.
- (2) Finalize Bridge/Large Culvert Hydraulic Report.
- (3) Recycle all previous activities/tasks that need to be updated or revised.

START DEPENDENCIES: Hydraulic Recommendations
FPIH

DISTRIBUTION AND USE: Required to complete file and project documentation.



ACTIVITY: Revise, Update & Finalize Irrigation Recommendations

DEFINITION: Review and revision of irrigation recommendations.

OUTPUT PROVIDED: Final review and documentation.

TASKS: (1) Assemble final irrigation report and documentation.

START DEPENDENCIES: Size irrigation structures
FPIH

DISTRIBUTION AND USE: Required to complete file and project documentation.



ACTIVITY: Prepare Special Details & Special Provisions

DEFINITION: Prepare final details and hydraulic related special provisions for inclusion in contract package.

OUTPUT PROVIDED: Detail sheets and special provisions.

TASKS:

- (1) Complete and finalize details regarding:
 - (a) special hydraulic requirements
 - (b) storm drain appurtenances and layouts
 - (c) irrigation facilities
- (2) Prepare special provisions to guide construction activities of hydraulic related features.
 - (a) scope
 - (b) construction
 - (c) materials
 - (d) inspection
 - (e) method of measurement and payment

START DEPENDENCIES: Finalize hydraulic recommendations.

DISTRIBUTION AND USE: Required to complete hydraulic phase of contract package for letting.



ACTIVITY: Noise Study

DEFINITION: Investigation, analysis and reporting of traffic related noise impacts.

OUTPUT
PROVIDED: Completed noise study report.

TASKS: Gather and analyze field measurements of existing traffic noise.
Predict design year noise levels.
Develop recommendations for noise abatement if noise levels are excessive.
Summarize data and recommendations in noise study report.

START

DEPENDENCIES: Set of project plans.
Present and design year traffic counts.

DISTRIBUTION
AND USE: Sent to Road Design (Area Engineer) for use in impact evaluation.



ACTIVITY: Prepare Report on Noise, Traffic Related Design Criteria and Traffic Related Problems.

DEFINITION: Traffic problem report.

OUTPUT PROVIDED: Report to Road Design concerning noise and traffic related problems and design requirements.

TASKS: Survey area for traffic related problems, (generally done by Division Engineer).
Request initial noise level report.
Check for design criteria.

START

DEPENDENCIES: Request from Road Design, copy of Location Planning Report and two autoscreens showing approximate locations being considered.

DISTRIBUTION AND USE: To Road Design for planning documents.



ACTIVITY: Preliminary Signal and Lighting Study

DEFINITION: Preparation of a traffic signal design study and of a lighting plan based on traffic design needs.

OUTPUT PROVIDED: Signal flasher and lighting plans.

TASKS: Warrant evaluation or design analysis.
Check for geometric problems.
Obtain utility information.
Study preliminary roadway lighting alternates.
Request field survey.
Evaluate environmental considerations.
Paperwork for environmental document.

START

DEPENDENCIES: Location data.
Rest area data, if applicable.

DISTRIBUTION AND USE: Distributed to the R/W Utility Section and is used as a preliminary review to define scope of project. This is also distributed to Road Design for information and possible inclusion into the plans.



ACTIVITY: Prepare Preliminary Geometrics

DEFINITION: Preliminary design studies for interchanges, intersections, and other geometric design elements for traffic.

OUTPUT
PROVIDED: Preliminary geometric layout for submittal to Federal Highway Administration and/or Road Design.

TASKS: Prepare capacity analysis.
Prepare interchange grades.
Prepare typical section.
Prepare alternates.
Site inspections.
Review with A.E.
Review for accuracy (checking).

START
DEPENDENCIES: Rest area information.
Location survey data.
Detailed traffic projected turning counts.
Weigh station information.

DISTRIBUTION
AND USE: Used to begin preparation of the final geometry.



ACTIVITY: Prepare Traffic Signal Plans

DEFINITION: Preparation of traffic signal design plans to be included with proposed roadway construction or existing intersection project plans.

OUTPUT
PROVIDED: Completed traffic signal design with plans and quantities.

TASKS: Evaluate geometric problems.
Meetings, telephone calls, and correspondence with local officials.
Field reviews.
Capacity and operation analysis.
Prepare final PS & E.
Review for accuracy.
Coordinate plans with utility companies.
Coordinate plans with Road Design.
Coordinate plans with railroad companies.

START

DEPENDENCIES: Design Public Hearing.
Grade and drain inspection.
Receive program document.

DISTRIBUTION

AND USE: Incorporated into the project plans and reviewed at the Plan-in-Hand inspection.



ACTIVITY: Prepare Roadway Lighting Plans

DEFINITION: Preparation of complete (final) lighting plans based on traffic and pedestrian needs.

OUTPUT PROVIDED: Completed lighting design with PS & E. Also title, quantity, etc., sheets if separate project.

TASKS: Compute preliminary roadway lighting alternates. Meetings, telephone conversations, and correspondence with local officials. Prepare and process lighting agreement. Coordinate plans with utility companies. Complete (draft) final plans, specifications and estimates. Review for accuracy.

START

DEPENDENCIES: Design Public Hearing. Grade and drain inspection.

DISTRIBUTION AND USE: Incorporated into the plans and reviewed at the Plan-in-Hand inspection.



ACTIVITY: Permanent Signing and Pavement Marking Plans.

DEFINITION: Completion of plans for signing and striping plan requirements for the project.

OUTPUT PROVIDED: Completed signing and striping design with PS & E.

TASKS: Prepare plans.
Prepare quantity sheets.
Site inspection.
Review for accuracy.

START

DEPENDENCIES: Design Public Hearing.
Grade and drain inspection.

DISTRIBUTION AND USE: Prepared for use at the Plan-in-Hand inspection.



ACTIVITY: Revise and Update Traffic Plans

DEFINITION: Preparation and update of all traffic related plans that may require changes or corrections.

OUTPUT PROVIDED: Final traffic plans.

TASKS: Review all traffic related plans.
Include any additions, corrections, etc.
Verify changes.

START

DEPENDENCIES: Verification of plans.

DISTRIBUTION AND USE: Used for inclusion into the plans, specifications and estimate to Contract Plans.

ACTIVITY: Soil Survey Investigation (Field)

DEFINITION: Investigate and report soil types encountered along proposed project corridor.

OUTPUT PROVIDED: Reports and investigations concerning corrosive soils. (Performed by Field Materials)

TASKS: Reconnaissance
In Place Moisture & Density
Samples for Structural Analysis
"R" Value Analysis
Soil Classification
Cross Section Cuts
Moisture & Density of Different Soil Types
Culvert Investigations

START DEPENDENCIES: Letter of Intent from Preconstruction

DISTRIBUTION AND USE: To aid Surfacing, Geology and Materials in developing recommendations.



ACTIVITY: Borrow & Surface Pit Investigation (Field)

DEFINITION: Locate, investigate and report borrow and surfacing pits, sample and (report soil profile). Chemical testing for corrosive soil and water to determine types of culverts acceptable.

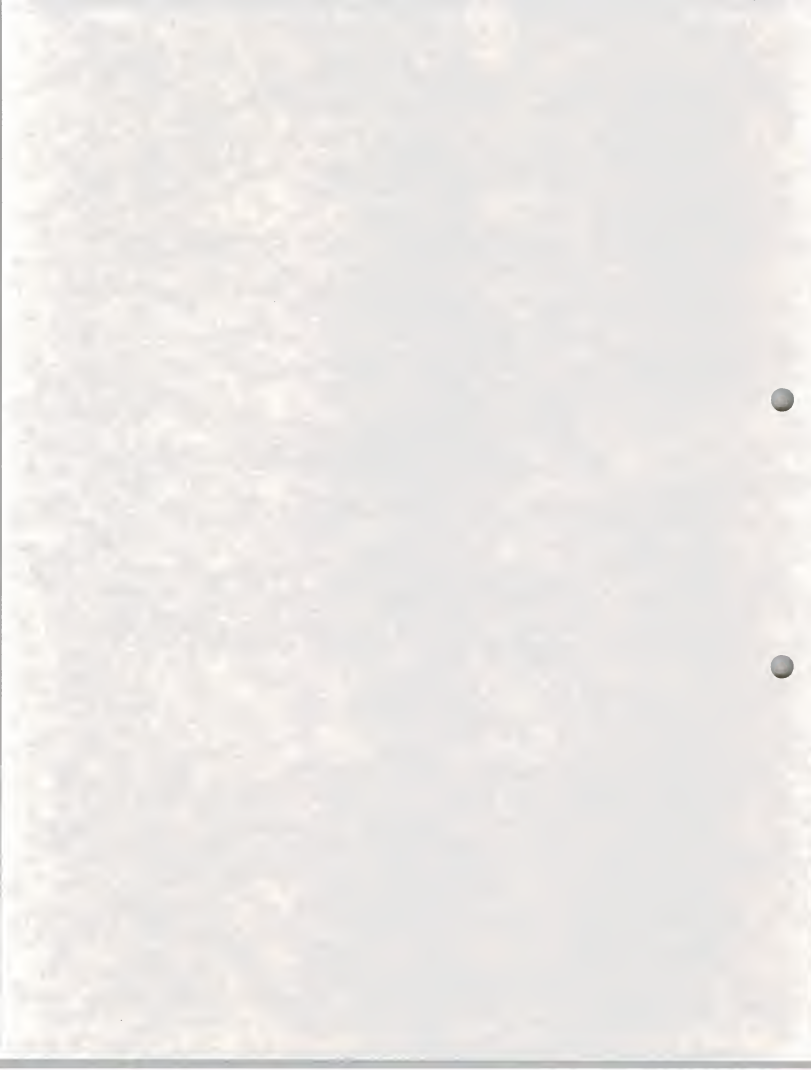
OUTPUT PROVIDED: Subsurface investigations and pit sheets. Samples for laboratory testing. Pipe recommendations. (Performed by Field Materials)

TASKS: Obtain permit from landowner.
Reconnaissance.
Subsurface exploration of borrow pits and surfacing pit.
Reclamation plan.
Survey pit site.
Plot sketch.
Negotiate pit agreement.
Maintain equipment.
Submit samples to Lab.
Preliminary drafting of surfacing and borrow pits.

START

DEPENDENCIES: Letter of intent from Preconstruction.
Materials survey.

DISTRIBUTION AND USE: This information is used to develop surfacing and borrow pits and pavement designs as well as special reports. Recommendations are furnished to Preconstruction, Hydraulics and Field Divisions as to type of pipe to be installed during construction.



ACTIVITY: Corrosion Testing

DEFINITION: Chemical testing for corrosive soil and water from drainage areas to determine the type of pipe (culvert) to be installed on each project.

OUTPUT PROVIDED: Chemical test results.

TASKS: Log in Samples
Sample Preparation
Moisture Content
pH Test
Marble pH Test
Calcium Carbonate Test
Carbon Dioxide Test
Sulfate Test
Conductivity Test

START DEPENDENCIES: Soil Survey Investigation

DISTRIBUTION AND USE: Material Bureau provides the necessary information and recommendation to Preconstruction, Hydraulics and Division Construction Supervisors on the type of pipe that should be installed during construction.

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ACTIVITY: MATERIALS SURFACING PIT TESTING

DEFINITION: Physical testing for roadway materials and acceptance of surfacing pits.

OUTPUT PROVIDED: Summarize physical testing results and make surfacing recommendations.

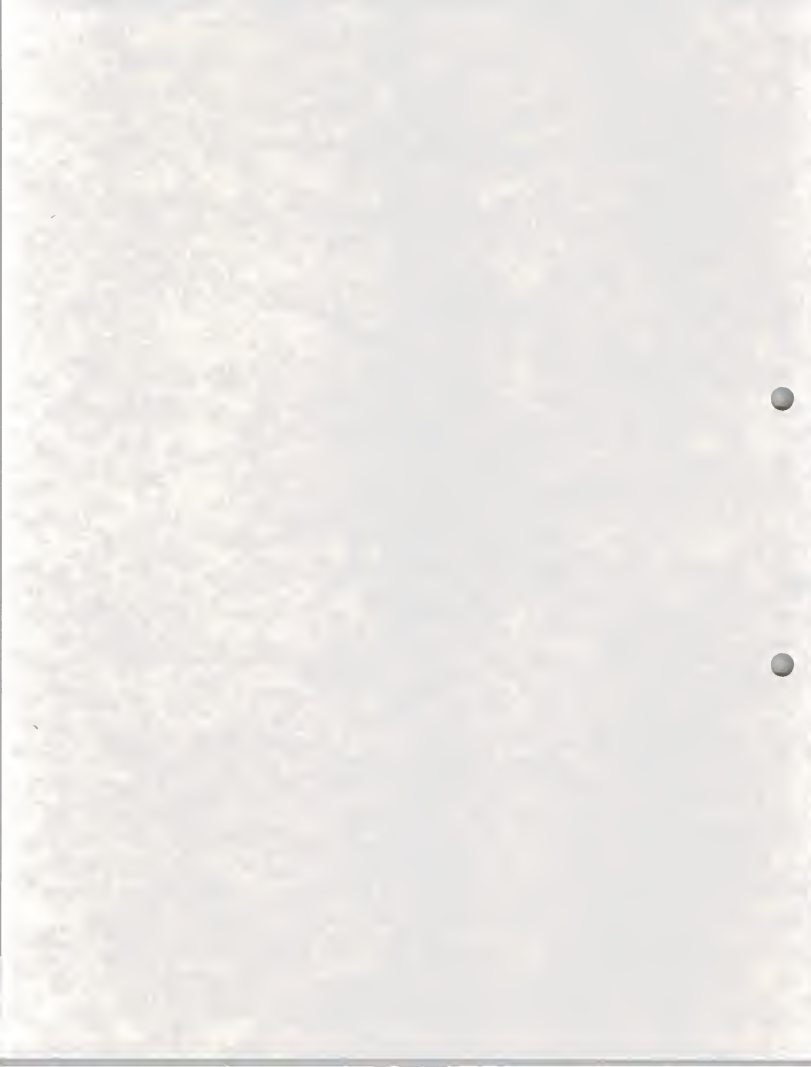
TASKS: Log in samples.
 Degradation.
 Sample preparation.
 Unit weight.
 Sieve Analysis.
 Immersion Compression
 Adhesion.
 Abrasion resistance.
 Fracture.
 Wash gradation.
 Cleanness value.
 Proctor.
 Kirby Procedure.
 R-Values.
 Cement Treated Base.
 Expansion - Swell
 Atterberg limits.
 Moisture density analysis.
 Spec. gravity.
 Sand equivalent.
 Soundness loss.
 Compile test results.
 Chloride testing.

START

DEPENDENCIES: Submission of field exploration samples (soils profile, surfacing and borrow pits.
 Field data review.

DISTRIBUTION

AND USE: Materials testing provides necessary information for the pavement design process and for surfacing pit acceptance.



ACTIVITY: GEOTECHNICAL SURVEYS - PRELIMINARY

DEFINITION: Office and Field geotechnical exploration and investigation of projects.

OUTPUT
PROVIDED: Foundation material samples and geotechnical data and information.

TASKS: Reconnaissance.
Office review of published geotechnical information on subject areas.
Field investigations: geologic surveying and mapping, geophysical surveys or other surficial inspections for corridor and preliminary engineering studies, items under construction and for locating material resources.
Direct the subsurface drilling to obtain foundation materials samples, perform in-place tests for soils or groundwater, install geotechnical monitoring devices, and installation of horizontal or vertical drains and wells.
Post construction investigations.
Monitoring: Groundwater wells and geotechnical devices.

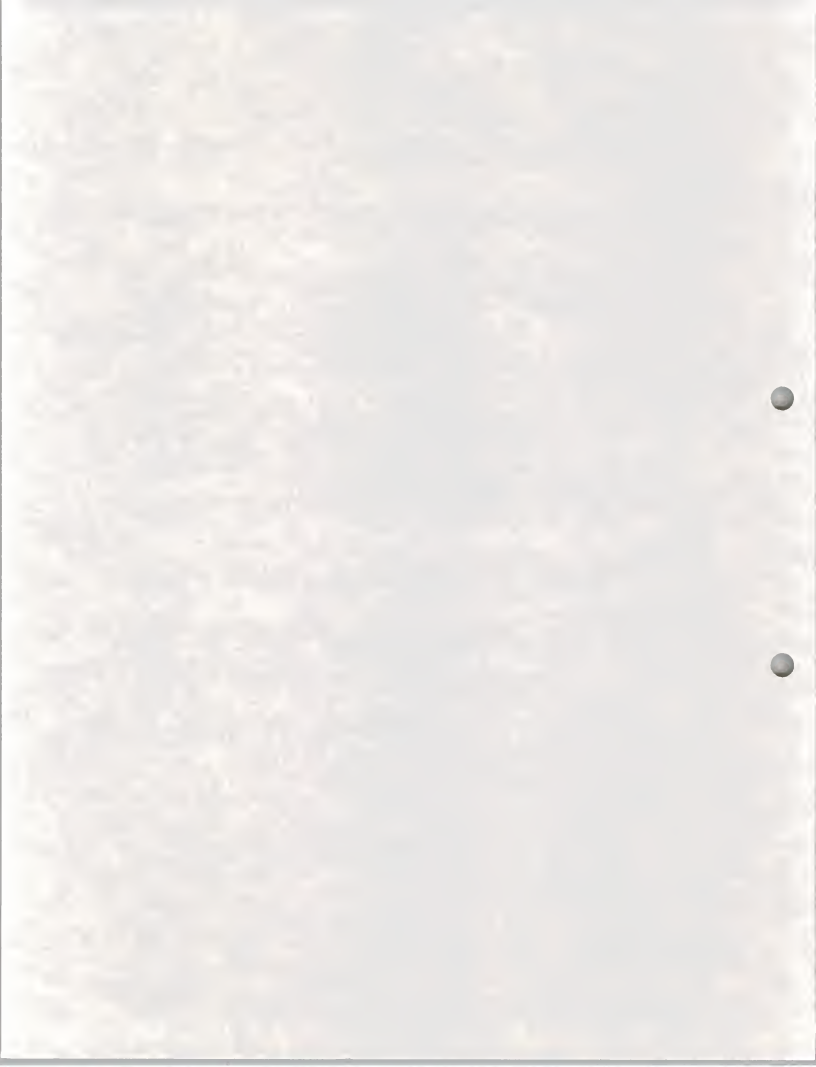
START

DEPENDENCIES: Letter of intent.
Preliminary plan or area location of project.

DISTRIBUTION

AND USE: Used within the section to provide information to expand a foundation investigation, foundation materials samples for laboratory testing and documentation to develop a geotechnical engineering design report.

Provide immediate recommendations during construction, maintenance and hazardous conditions for problem corrections.



ACTIVITY: GEOTECHNICAL MATERIALS TESTING - PRELIMINARY

DEFINITION: Laboratory testing of materials for geotechnical engineering designs or reports and construction project quality control.

OUTPUT
PROVIDED: Laboratory testing results and interpretation for data synthesis or quality control.

TASKS: Visual and physical observation and testing of earth foundation and construction materials and interpretations of these tests prepare laboratory report of testing results, observations and interpretations.

START
DEPENDENCIES: Materials samples.

DISTRIBUTION
AND USE: Used within Section to provide information for geotechnical engineering designs and reports and/or results distributed for quality control of materials sources and projects.



ACTIVITY: GEOTECHNICAL ENGINEERING - PRELIMINARY

DEFINITION: Engineering analysis design and report on the Earth science environment which affects the safety, efficiency and economy of engineering works related to highway construction and maintenance.

OUTPUT PROVIDED: Geotechnical Engineering Report.

TASKS: Interpretation, analysis, and synthesis of field and laboratory data for geotechnical engineering design.
Geotechnical engineering design.
Assembly of Geotechnical Engineering Report including results of field and laboratory work and design recommendations.

START

DEPENDENCIES: Preliminary engineering design.
Field and/or Laboratory information.

DISTRIBUTION AND USE: Provide reports necessary for highway and highway structure design, right of way acquisition, construction, maintenance, and legal aspects of highways.



ACTIVITY: GEOTECHNICAL SURVEYS - FINAL

DEFINITION: Office and Field geotechnical exploration and investigation of projects.

OUTPUT
PROVIDED: Foundation material samples and geotechnical data and information.

TASKS: Reconnaissance.
Office review of published geotechnical information on subject areas.
Field investigations: geologic surveying and mapping, geophysical surveys or other surficial inspections for corridor and preliminary engineering studies, items under construction and for locating material resources.
Direct the subsurface drilling to obtain foundation materials samples, perform in-place tests for soils or groundwater, install geotechnical monitoring devices, and installation of horizontal or vertical drains and wells.
Post construction investigations.
Monitoring: Groundwater wells and geotechnical devices.

START

DEPENDENCIES: Letter of intent.
Preliminary plan or area location of project.

DISTRIBUTION
AND USE:

Used within the section to provide information to expand a foundation investigation, foundation materials samples for laboratory testing and documentation to develop a geotechnical engineering design report.

Provide immediate recommendations during construction, maintenance and hazardous conditions for problem corrections.



ACTIVITY: GEOTECHNICAL MATERIALS TESTING - FINAL

DEFINITION: Laboratory testing of materials for geotechnical engineering designs or reports and construction project quality control.

OUTPUT
PROVIDED: Laboratory testing results and interpretation for data synthesis or quality control.

TASKS: Visual and physical observation and testing of earth foundation and construction materials and interpretations of these tests prepare laboratory report of testing results, observations and interpretations.

START

DEPENDENCIES: Materials samples.

DISTRIBUTION
AND USE:

Used within Section to provide information for geotechnical engineering designs and reports and/or results distributed for quality control of materials sources and projects.



ACTIVITY: GEOTECHNICAL ENGINEERING - FINAL

DEFINITION: Engineering analysis design and report on the Earth science environment which affects the safety, efficiency and economy of engineering works related to highway construction and maintenance.

OUTPUT
PROVIDED: Geotechnical Engineering Report.

TASKS: Interpretation, analysis, and synthesis of field and laboratory data for geotechnical engineering design.
Geotechnical engineering design.
Assembly of Geotechnical Engineering Report including results of field and laboratory work and design recommendations.

START
DEPENDENCIES: Preliminary engineering design.
Field and/or Laboratory information.

DISTRIBUTION
AND USE: Provide reports necessary for highway and highway structure design, right of way acquisition, construction, maintenance, and legal aspects of highways.



ACTIVITY: OBTAIN CORE DRILL DATA

DEFINITION: Develop project information relating to soil formation through standard drilling procedures.

OUTPUT PROVIDED: Core logs, field test results.

TASKS: Drilling, field testing, sampling.

START

DEPENDENCIES: Bridge plans or road plans from Geology.

DISTRIBUTION AND USE: By Geology, to Bridge, Hydraulics, and Bureau of Mines.



ACTIVITY: PHOTOGRAMMETRY GROUND CONTROL SURVEY

DEFINITION: Perform necessary field survey in accordance with standard practices involving preparations for aerial photography.

OUTPUT PROVIDED: Sufficient survey data to establish horizontal and vertical control for aerial photography.

TASKS: Establish coordinate system
Establish bearings
Close traverse
Tie section corners
Provide vertical elevations
Locate ownerships

START

DEPENDENCIES: Survey request from Preconstruction involving aerial photography needs.

DISTRIBUTION AND USE: Used to establish controls for developing photogrammetry mapping.



ACTIVITY: PERFORM FIELD SURVEY

DEFINITION: Assign survey crew to perform the activities necessary to produce a complete route survey, in accordance with standard practices.

OUTPUT

PROVIDED: Survey notes, topography, hardshell, profile and related data.

TASKS:

Establish fly line
Run centerline
Run levels & benchmarks
Cross section
Topography
Tie section lines
Check notes
Plot profile
Draw hardshell
Compile drainage and bridge recommendations

START

DEPENDENCIES: Request for field survey from Preconstruction

DISTRIBUTION

AND USE: Used by Preconstruction to begin design of roadway and by Bridge for structure design.

ACTIVITY: Initiate file and place on work program.

DEFINITION: Initiation of project file and determination of status in the engineering work plan.

OUTPUT
PROVIDED: Acknowledgment of the project.

TASKS: Prepare project file.
Assign Crew
Determine tentative manpower requirements.

START

DEPENDENCIES: Authorization of project survey.

DISTRIBUTION
AND USE: Distributed to: Area Engineer, Road Design, Traffic Design, FHWA, Railroad, Utilities, Bureau of Reclamation, Conservancy District. Used for: Design public hearing, request for 404 permit, interagency approval, and plotting bridge foundation data. Project Management work plan and scheduling.



ACTIVITY: Prepare preliminary bridge layout.

DEFINITION: Preparation of preliminary bridge layouts, preliminary cost estimates and updating of manpower requirements.

OUTPUT
PROVIDED: Preliminary layout and scope of work.

TASKS: Prepare preliminary bridge layouts.
Request hydraulic evaluation.
Request subsurface investigation.
Prepare and study contour maps.
Determine minimum roadway grade.
Update manpower requirements.
Coordinate roadway grade and alignment.
Prepare preliminary cost estimate.
Determine railroad requirements.

START

DEPENDENCIES: Receipt of bridge situation survey.

DISTRIBUTION

AND USE: Preconstruction for use in road plans preliminary plan-in-hand. Planning & Research for off-system projects.



ACTIVITY: Prepare bridge general layout for P.I.H.

DEFINITION: Preparation of bridge general layouts and core log drawings and cost estimates, alternate studies.

OUTPUT PROVIDED: General layout of preferred structure type or types and supporting data.

TASKS: Prepare general layout.
Select bridge type or types.
Select foundation type.
Schedule P.I.H.
Make distribution.
Perform cost studies.
Investigate alternate designs.
Request permits.

START

DEPENDENCIES: Receipt of subsurface investigation.
Receipt of hydraulics study.

DISTRIBUTION AND USE: To Preconstruction, Hydraulics; FHWA; counties; Coast Guard; Canal owners; Fish, Wildlife & Parks; etc. Used to request permits and approvals.



ACTIVITY: Complete P.I.H. and Interagency Approvals. (For Bridges)

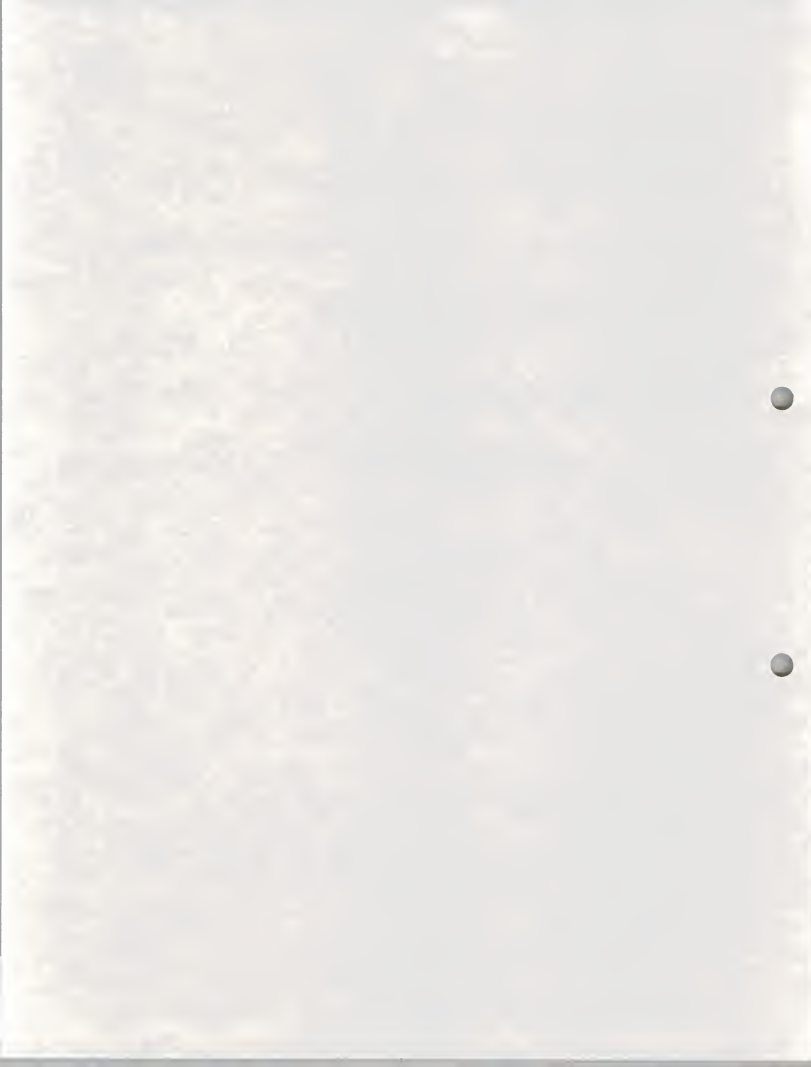
DEFINITION: Approval by FHWA, F.W. & P, Railroads, Canal Co., and/or other agencies of preliminary bridge layout.

OUTPUT PROVIDED: Final selection of bridge type and interagency approvals. Complete cost analysis.

TASKS: Coordinate and receive responses.
Acquire necessary approvals.
Revise preliminary bridge layout.
Write P.I.H. report

START DEPENDENCIES: Preliminary bridge layout and footing plan.

DISTRIBUTION AND USE: plan-in-hand report to Preconstruction, Hydraulics, FHWA, F.W. & P., Counties, etc. Used to acquire approvals and permits and inform other agencies.



ACTIVITY: Design and Detail Bridge

DEFINITION: Design and detail entire project.

OUTPUT
PROVIDED: Complete design and detailed plans of project.

TASKS: Perform bridge design.
Complete check of bridge design.
Detail bridge plans.
Check details by crew.
Coordinate roadway items with bridge plans.
Coordinate utility attachments to bridge.
Design and Detail misc. items for other sections
and/or units.

START

DEPENDENCIES: Approved bridge general layout.
P.I.H. report.

DISTRIBUTION
AND USE: Used as final bridge plans and for final checking
and preparation of engineer's estimate and special
provisions.



ACTIVITY: Final check of bridge plans.

DEFINITION: Final check of bridge plans.

OUTPUT

PROVIDED: Bridge plans, special provisions and Engineer's Estimate.

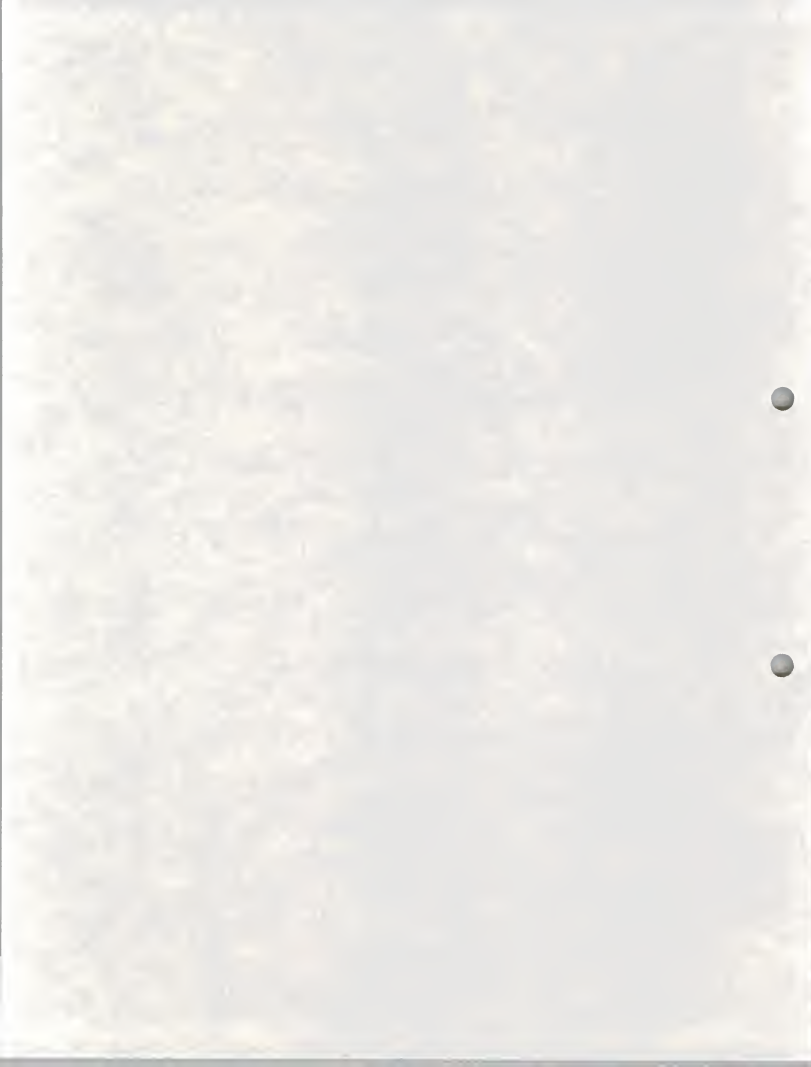
TASKS: Final check of bridge plans.
Prepare special provisions.
Prepare Engineer's Estimate.
Resolve all conflicts concerning non-bridge items.

START

DEPENDENCIES: Complete plans and design.

DISTRIBUTION

AND USE: To final checker for completion of all contract documents.



ACTIVITY: Review by bridge engineer and revisions to contract documents.

DEFINITION: Final review by bridge engineer and/or assistant bridge engineer.

OUTPUT PROVIDED: Completed contract documents.

TASKS: Perform review of documents, check on all permits and approvals.
Update documents.
Make revisions as necessary.
Complete documents and plans for Contract Plans Unit.

START DEPENDENCIES: Completed contract plans, special provisions and engineer's estimate.

DISTRIBUTION AND USE: Distributed to Contract Plans, F.H.W.A., and other agencies as required. To railroad for final approval of contract plans when required.



ACTIVITY: Prepare Surfacing Typical Section.

DEFINITION: Determine thickness and type of material using soils and traffic information and accepted procedures.

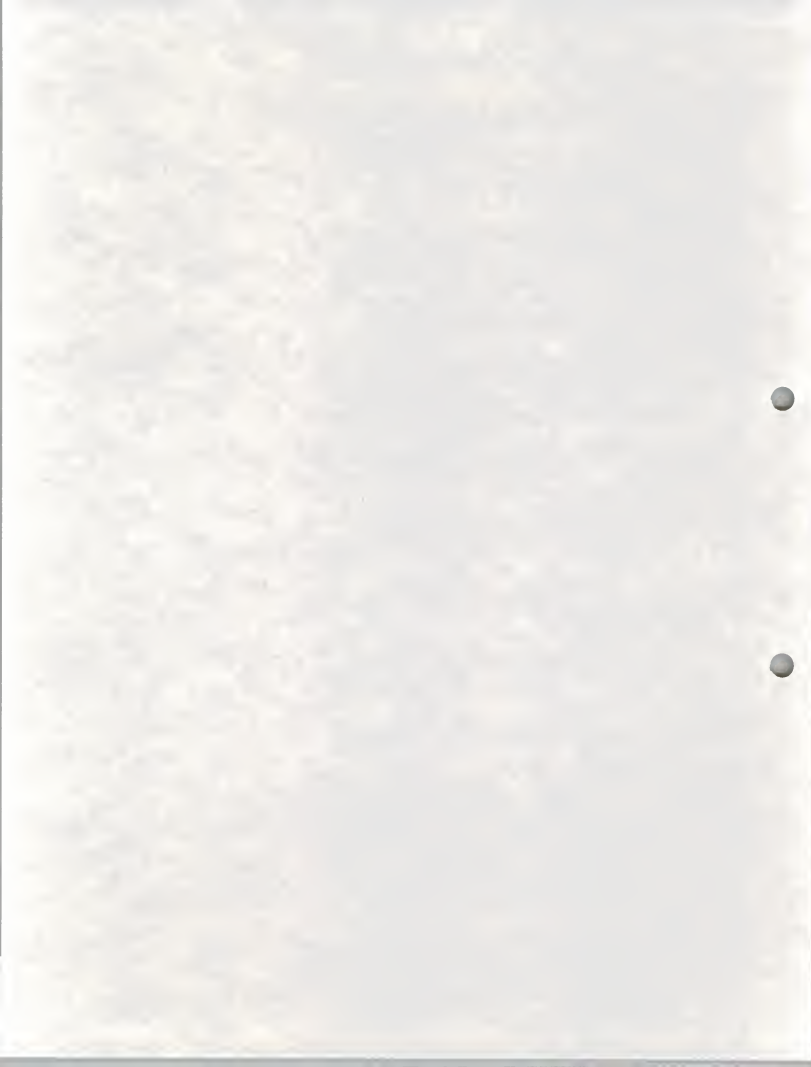
OUTPUT
PROVIDED: Approved typical sections.

TASKS: Determine alternate combinations of materials which meet structural requirements.
Prepare cost estimates for each combination of materials.
Send recommended alternates to "Surfacing Selection Committee" for final selection.
Submit approved typical to Road Design Section.

START

DEPENDENCIES: Request from Road Design Section.

DISTRIBUTION
AND USE: Road Design Section.
Field Construction Division.



ACTIVITY: Prepare for Public Hearing.

DEFINITION: Develop and assemble information required to present the project at a Public Hearing.

OUTPUT PROVIDED: Request for Public Hearing.

TASKS: Prepares displays for the public hearing.
prepares cost estimates for the alternates being considered.
Prepares a draft of the "Location (or Location and Design) Study Report."
Furnishes the Public Hearings Unit the displays, the draft Environmental Assessment, E.I.S. or combined Environmental Assessment EIS/Section 4(f) Statement, and draft of the "Location (or Location and Design) Study Report" and requests that the public hearing be scheduled.

START

DEPENDENCIES: Aerial Photography.
Approved draft or final Environmental document.
Completion of alternate studies.

DISTRIBUTION AND USE: Public Hearings Unit information used distribute to the public and at the Public Hearing.



ACTIVITY: Location or Combined Location-Design Public Hearing.

DEFINITION: Hold Public Hearing.

OUTPUT PROVIDED: Public Hearing Transcript.

TASKS: Schedules, distributes appropriate notices, and conducts the public hearing.

START DEPENDENCIES: Approved final or displays approved Draft Environmental Document. Draft Location or Location Design Study Report.

DISTRIBUTION AND USE: Speakers at Hearing.
Others on distribution list.
Various Bureaus in Department, FHWA and other Government Agencies.
Used to document public opinions, preference, and proposals concerning the project.



ACTIVITY: Design Public Hearing.

DEFINITION: Formal presentation, to the concerned public, of the alignment and any other details of interest to them. Also, a solicitation of their comments and input relative to the project.

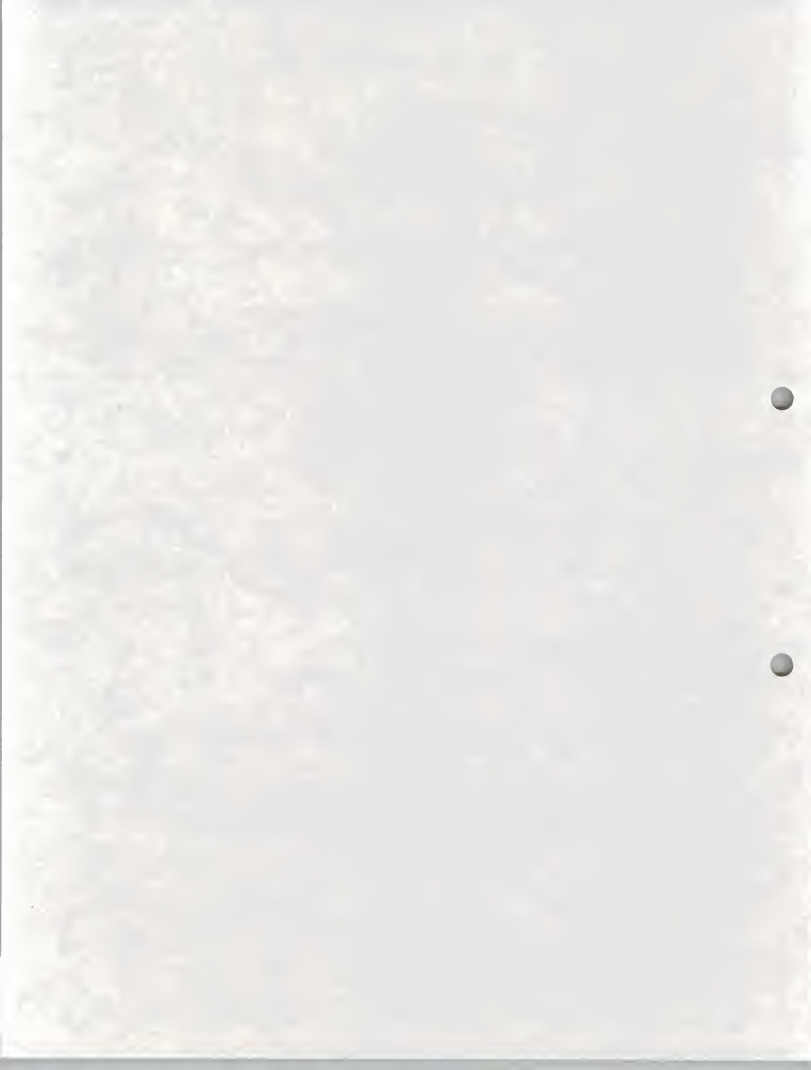
OUTPUT PROVIDED: Public Hearing Transcript of the presentation and the public's comments about the project.
Draft Design Study Report.

TASKS: Designer initiates the development of the displays for the design hearing if required.
Area Engineer develops a draft design study report in accordance with FHPM 7-7-5 documenting the significant features and criteria used in the design of the project.
Area Engineer furnishes the Chief, Preconstruction Bureau thirteen copies of the design study report for presentation to the Impact Evaluation Group.
Area Engineer furnishes the Public Hearing Unit the displays, the environmental document and the draft of the design study report and requests that the design hearing be scheduled if required.
Manager, Public Hearing Unit schedules and distributes appropriate notices and conducts public hearing.

START

DEPENDENCIES: Public Hearing Display
Preliminary plans
Environmental Statement
Draft Design Study Report

DISTRIBUTION AND USE: When feasible, the comments received from the public hearing are incorporated into the plans. Copies of the Public Hearing Transcript are distributed to those participating in the public hearing and all others that desire a copy. The Draft Design Study Report is distributed to the Chief, Preconstruction Bureau for presentation to the Impact Evaluation Group.



ACTIVITY: Info, Notice of Final Design Approval.

DEFINITION: Prepare and distribute Informational Notice of Location and/or Design Approval of a project.

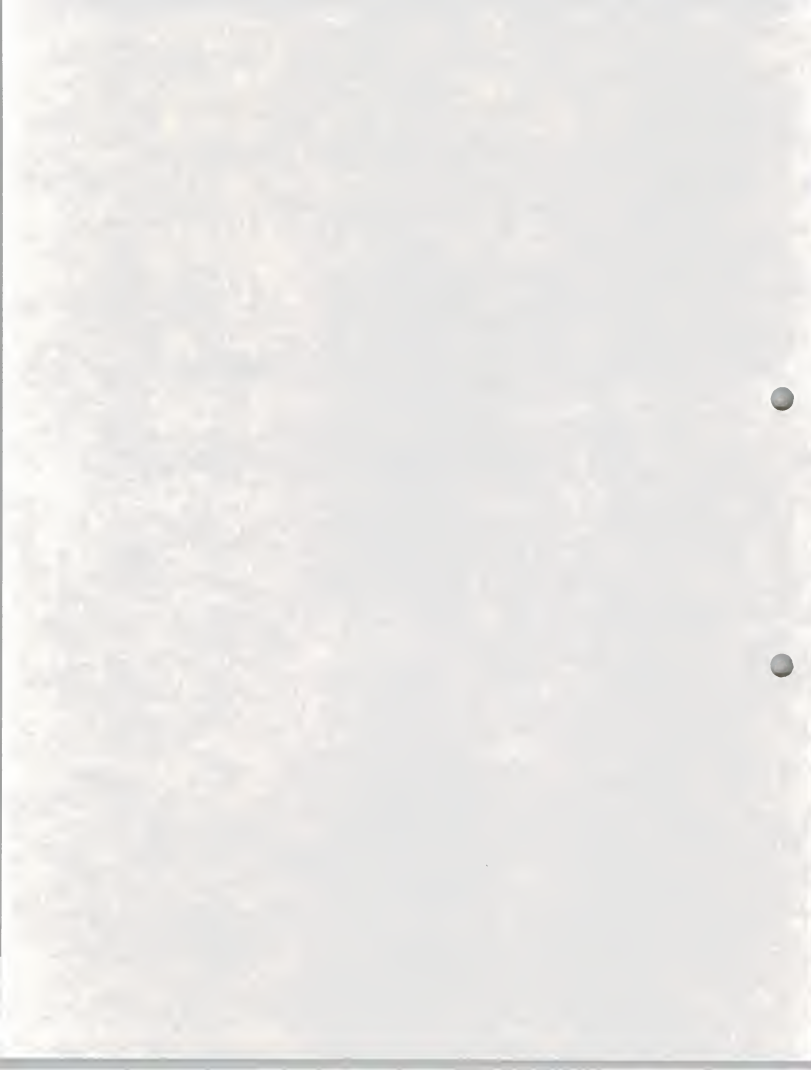
OUTPUT PROVIDED: A legal notice describing a project limits and scope of work. A mailing list of those concerned with the project.

TASKS: Review the Public Hearing's file and draft, have proofed (area engineer and others), typed final form and signed, the formal notice. Review file and have typed, the mailing list of all persons and agencies concerned with the project. (In house, state and federal offices; local city, county and state officials and interested citizens and organizations.)

START

DEPENDENCIES: A signed approved location and/or design approval received from engineering for a project on which a public hearing or meeting was held or as determined by engineering administration.

DISTRIBUTION AND USE: The signed notice distributed to all on the meeting list and filed as the usual final action taken by Public Hearings on the public involvement activity for the location and/or design studies of the project.



ACTIVITY: Landscape Architect Review & Report

DEFINITION: Preliminary project review to assess significant physical, chemical, visual, biological and cultural resource impacts. Also, prepare or review draft of Draft Environmental Impact Statement.

OUTPUT

PROVIDED: Preliminary project plan for treatment of physical, chemical, visual, and cultural elements. Report detailing projects impact on fish and wildlife with special emphasis on wetlands, endangered species and cultural resources including impacts on prehistoric archaeological properties and paleontological resources. Also, preliminary review of alternative and data gathering.

TASKS:

Landscape

1. Field Review, soil samples, vegetation identification.
2. Take photographs and collect physical/visual data.
3. Review data on climatology and prepare seeding recommendation or reclamation/erosion control plan.
4. Prepare reports summarizing findings and progress.

Environmental

1. Field review of alternatives.
2. Compile data for area of expertise.
3. Edit draft, assemble data from others within the Department and other agencies.
4. Prepare or review and circulate Final E.I.S.

Fish & Wildlife Biologist Review and Report

1. Field Review.
2. Collect relevant environmental data.
3. Determine wetland involvement.
4. Determine threatened and endangered species involvement.



5. Prepare mitigation plan.
6. Prepare report summarizing project impact.
7. Request threatened and endangered species list.
8. Prepare biological assessment.
9. Provide biological input on 404 permit application.

Cultural Resource Review & Report

1. Literature and file review.
2. Field review.
3. Prepare reports summarizing findings and progress.

START

DEPENDENCIES: Identification of project/Right of Way indication of option of borrow source/Requests from Hydraulics Unit.

DISTRIBUTION
AND USE:

Used by location team to evaluate project alternates, and by Area Engineers to complete design of projects. Reclamation permit from Department of State Lands required. Used by D.O.H. personnel prior to start of construction.



ACTIVITY: Landscape Architect Input (Input Costs).

DEFINITION: Visits made to the project site and surrounding area to gather information to begin project design and to check design details on the site.
Preparing a preliminary cost estimate.

OUTPUT PROVIDED: Landscape Feasibility Report and Estimate.

TASKS: Make notes relevant to design.
Take photographs.
Check design details on site.
Prepare reports summarizing findings and progress.
Provide a preliminary cost estimate.
Coordinate water geology report.

START

DEPENDENCIES: Expand location study team and determine alternates.

DISTRIBUTION AND USE: Used as input into the Draft EIS and for public hearing presentation.



ACTIVITY: Preliminary Rest Area Feasibility.

DEFINITION: Perform rest area site study, facility requirement study and water supply analysis.

OUTPUT
PROVIDED: Report on requirements of rest area facilities.

TASKS: Make notes relevant to site and design.
Acquire photographs.
Check design detail.
Prepare reports summarizing findings and progress.
Visit project site.
Coordinate well drilling with Testing Lab Geologists or conduct alternate water supply study.

START

DEPENDENCIES: Checked survey documentation.

DISTRIBUTION
AND USE: Prepared for use at the Field Design Inspection.



ACTIVITY: Prepare Landscape Architectural Plan.

DEFINITION: The development of a comprehensive recommendation for the method, procedure, and material to be used to minimize the effect of physical disturbance by highway construction projects.

OUTPUT PROVIDED: Physical and visual treatment recommendations.

TASKS: Project site evaluation, extent of disturbance due to construction, topography, soil type, climatic data, adjacent land use and other pertinent data.
Preparation of recommendation letter from project site evaluation.
Erosion Control Plan Recommendations.
Coordinate development plans with cooperating agencies.
Preparation of landscape development plans, details and specifications.
Develop cooperative agreements for maintenance, water, etc.

START

DEPENDENCIES: Grade and drain inspection.

DISTRIBUTION AND USE: The recommendations are incorporated into the plans and reviewed at the Plan-in-Hand Inspection.



ACTIVITY: Develop Final Rest Area, PS & E.

DEFINITION: Design and development of rest area construction plans, specifications and estimates. Preparation of landscape development plans as required.

OUTPUT PROVIDED: Plans, specifications and estimate for rest areas.

TASKS: Site description and acquisition.
Obtain facility design requirements from traffic data.
Coordinate acquisition of water and power supplies.
Site plan preparation, structure placement, walks, drive layouts and grading.
Prepare restroom building and shelter architectural plans and details.
Prepare water, sewage and utility plans and details.
Develop landscape design.
Prepare landscape plans, sketches, photos and models.
Prepare construction cost estimates.
Prepare specifications.

START

DEPENDENCIES: Location survey data.
Lab and drainage reports, if applicable.
Preliminary rest area feasibility.
Field design inspection information.
Development of an adequate potable water supply.

DISTRIBUTION AND USE: Incorporated into project plans prior to the Plan-in-Hand Inspection.



ACTIVITY: Request Preliminary R/W Reports and Estimates.

DEFINITION: Prepare contiguous ownership plats, Relocation Assistance Conceptual Study and Narrative R/W Report.

OUTPUT PROVIDED: Preliminary ownership information, cost estimates, EIS information, landowner's facilities. Required 4(f) involvement, social and economic effect, possible functional replacement facilities.

TASKS: Request Field R/W Section to prepare:

- a. Contiguous Ownership Plats
- b. Relocation Assistance Conceptual Study
- c. Narrative R/W Report

START

DEPENDENCIES: Receipt of request from Preconstruction Bureau and autoscreen prints or first brownlines with centerline and any alternates shown.

DISTRIBUTION AND USE: Distribution made to Preconstruction Bureau for aid in determining route, preliminary cost estimate, preparation of EIS, 4(f) involvement and design of land use facilities.



ACTIVITY: Preliminary Utility Review and Estimates.

DEFINITION: Prepare Preliminary Utility estimates and report concerning major utility or railroad involvement or conflicts that may come under the Major Facilities Siting Act.

OUTPUT PROVIDED: Preliminary estimates and effects on utility or railroad in project area.

TASKS: Request Utilities Section to prepare:

- a. Report on possible utility or railroad involvement.
- b. Preliminary utility and railroad estimates for all alternates under consideration

START DEPENDENCIES: Receipt of request from Preconstruction Bureau and autoscreen prints or first brownlines with proposed centerline and any alternates shown.

DISTRIBUTION AND USE: Distribution made to Preconstruction Bureau to aid in determining route and design of final alignment.



No. ^{R/W} 804

ACTIVITY: Obtain title evidence

DEFINITION: Request title information from certified title company

OUTPUT PROVIDED: Provides factual information as to owner of the land, manner of acquisition, easements, encumbrances, tax status, title defects and description.

TASKS:

1. Send maps and request to appropriate land title company
2. Distribute copies to Preconstruction Bureau.
3. Distribute copies to Legal Section requesting legal opinion.

START

DEPENDENCIES: Receipt of first brownlines and request from Preconstruction Bureau for title information when centerline has been determined.

DISTRIBUTION AND USE: Distribution made to Preconstruction Bureau and Legal Section. To show ownership on final R/W plans, and to indicate if owner listed has good title and what encumbrances need to be cleared so the Dept. has good title when the purchase for R/W is completed.



ACTIVITY: Limited Access Control Study

DEFINITION: Complete an Access Control Study for all ownerships affected by the project.

OUTPUT
PROVIDED: Information for designing the amount of access control to be acquired on a project.

TASKS:

1. Make field review of project area for approaches in place.
2. Contact affected landowners.
3. Contact local planning authorities.
4. Furnish plats, maps showing all public streets.
5. Prepare the access plan indicating all private and public approaches which need to be included in the project.

START
DEPENDENCIES: Notification that project will be limited Access Control.

DISTRIBUTION
AND USE: To prepare Access Control Resolution and complete R/W plans.



ACTIVITY: Limited Access Control Resolution

DEFINITION: Prepare Limited Access Control Resolution to establish degree of access allowed on a project.

OUTPUT PROVIDED: Prepare Limited Access Control Resolution for Highway Commission and inform the public of such resolution

TASKS:

1. Review Access Study.
2. Determine final classification and number of access points to be allowed on the project.
3. Prepare Limited Access Control Resolution for Highway Commission approval.
4. Send approved resolution to county for recording.
5. Place legal public notice in paper.
6. Prepare and distribute insert for access information booklet.

START DEPENDENCIES: Receipt of Limited Access Control Study.

DISTRIBUTION AND USE: To officially commit Department to limited access control project and inform the public and Department maintenance personnel of proposed project.



ACTIVITY: Justification of Land Service Facilities

DEFINITION: Prepare necessary studies and obtain estimates for Land service facilities, includes depreciation showing whether such land facility should be included in the final plans for the project.

OUTPUT PROVIDED: Determines which land service facilities will be included in final plans for the project.

TASKS:

1. Request Field R/W to complete the necessary studies and obtain estimates for the facility.
2. Review studies, distribute to Preconstruction Bureau stating which facility should be included in the final plans.
3. When required, obtain FHWA approval to include such land service facility in final plans with federal participation.

START DEPENDENCIES: When second set of brownlines are received from Preconstruction Bureau.

DISTRIBUTION AND USE: To Preconstruction Bureau for inclusion in final plans and to FHWA for approval of Federal participation in the facility.



ACTIVITY: Obtain Right-of-Way authorization data

DEFINITION: Obtain data to prepare programming request for right-of-way acquisition, estimates for utility moves and railroad involvement. Relocation assistance and establish funding for these activities.

OUTPUT
PROVIDED: Submission of data for programming.

TASKS:

1. Field trips.
2. Research comparable sales.
3. Preparation of estimate of total acquisition costs.
4. Preparation of Relocation Assistance costs.
5. Preparation of estimate of total utility and railroad costs.
6. Receive, review all estimates, add incidental costs.
7. Request program of monies for R/W, utilities and Relocation Assistance activities.

START
DEPENDENCIES: Receipt of second set of brownlines.

DISTRIBUTION
AND USE: Used to program for right-of-way acquisition, IC and railroad agreements.



No. *R/W*
814

ACTIVITY: Obtain authorization to acquire.

DEFINITION: Receive FHWA approval of final R/W plans and program to appraise and/or acquire.

OUTPUT PROVIDED: Approval of R/W plans and FHWA approval of R/W funding.

TASKS: Prepare request for authorization.

START DEPENDENCIES:

1. Approval of final right of way map.
2. Approval of Environmental Impact Statement.
3. Design Public Hearing.
4. Grade and Drain Inspection complete.

DISTRIBUTION AND USE: Used to obtain authorization



ACTIVITY: Authorize project for acquisition

DEFINITION: Approval to proceed with R/W, Utility and railroad activities.

OUTPUT PROVIDED: Notification to all sections to begin R/W, utility, railroad and relocation assistance activities.

TASKS:

1. Distribute final R/W plans and authorization to proceed.
2. Distribute necessary construction plans, title information and cross-sections.

START

DEPENDENCIES:

1. Approval of final R/W plans and program by FHWA.
2. Approval of EIS.
3. Design public hearing.
4. Grade and Drain inspection complete.

DISTRIBUTION AND USE:

To all required sections and to begin R/W acquisition, relocation assistance, utility agreements and railroad agreements.



ACTIVITY: Assign Appraiser

DEFINITION: Establish project scope to determine if the appraisal is to be done by Department staff or an outside appraiser.

OUTPUT PROVIDED: Assigned Appraiser.

TASKS:

1. Review maps and documents, including title reports.
2. Assign appraisers to project and field inspection.
3. Establish time frame for completion of project.
4. Negotiate for fee appraisal contract.

START DEPENDENCIES:

1. Authorization of right-of-way acquisition.
2. Final right-of-way map.
3. Title reports complete.

DISTRIBUTION AND USE: Used to assign appraisers.



ACTIVITY: Appraise Right of Way

DEFINITION: Estimating the fair market value of the property to be acquired for right-of-way.

OUTPUT
PROVIDED: Appraisal report.

TASKS:

1. Gather market data.
2. Inspects and measures all properties (sales & subjects).
3. Identify property to be appraised.
4. Specify the rights involved.
5. Set the date of the value estimate.
6. Collect specific general data.
7. Prepare appraisals by: Cost Approach
Market Approach
Income Approach
8. Correlate value indications.
9. Estimate final value.
10. Submit for typing and assembling.

START
DEPENDENCIES:

1. Assign appraiser.
2. Construction plans and cross-sections.

DISTRIBUTION
AND USE: Used to prepare appraisals for review.



R/W

No. 822

ACTIVITY: Review appraisals.

DEFINITION: Review of appraisal procedures for conformity with Department and Federal Highway Administration guidelines.

OUTPUT PROVIDED: Approved appraisals.

TASKS:

1. Review work by field inspection of sales and subjects.
2. Check for technical compliance with all requirements.
3. Accept, reject or obtain needed appraisal corrections.
4. Write conclusion of appraisal value.

START DEPENDENCIES: Receipt of Right-of-way appraisals.

DISTRIBUTION AND USE: Used to authorize negotiation for right-of-way.



ACTIVITY: Negotiations for railroad agreements and easements.

DEFINITION: Complete final railroad agreements and easements.

OUTPUT PROVIDED: Completed railroad agreements.

TASKS:

1. Review plans and documents.
2. Establish time frame for completion of railroad involvement.
3. Prepare application for submittal to railroad.
4. Field review and inspection.
5. Coordination during preparation of agreement.
6. Negotiate for railroad R/W.
7. Review, check and accept final agreement.

START DEPENDENCIES:

1. Authorization to acquire R/W
2. Receipt of railroad plans.

DISTRIBUTION AND USE: Distribute to various Department Sections and Bureaus for railroad relocation, making payment, and for information.



ACTIVITY: Negotiations for Utility Agreements.

DEFINITION: Complete final Utility Agreements.

OUTPUT PROVIDED: Provides completed Utility Agreements.

TASKS:

1. Review plans, maps and documents.
2. Establish time frame for completion of utility involvement.
3. Make application to affected utility.
4. Field Review and inspection.
5. Review estimate and prepare agreement.
6. Negotiate with utility and complete agreement.

START DEPENDENCIES: Receipt of utility plans.

DISTRIBUTION AND USE: To various Department Sections & Divisions for physical relocation and payment.



ACTIVITY: Assign Negotiator.

DEFINITION: Contacting property owners and documentation of the negotiations to obtain necessary properties for project construction establish project scope and assign negotiator.

OUTPUT
PROVIDED: Assigned negotiator.

TASKS:

1. Review maps, documents, appraisals, title reports and design plans.
2. Assign negotiator to project and field inspection.
3. Establish time frame for completion of assignment.
4. Preparation of negotiator's package.

START
DEPENDENCIES:

1. Review and approval of appraisals.
2. Final right-of-way maps.
3. Construction plans.
4. Title reports.
5. Property descriptions.

DISTRIBUTION
AND USE: Used to assign negotiator.



R/W
No. 830

ACTIVITY: Negotiate Right-of-Way

DEFINITION: Acquisition of right-of-way by negotiation of fair market value from an approved appraisal.

OUTPUT PROVIDED: Signed right-of-way documents or submitted for condemnation.

TASKS:

1. Contact owner (or representative) in person or by mail.
2. Present offer and obtain signatures.
3. Obtain mortgage releases, clear taxes and liens.
4. Prepare documentation and submit payment package.
5. Prepare condemnation package and submit to Legal Division.
6. Obtain Grant of Right-of-Way.
7. Analyze, prepare, correspond and obtain temporary construction permits.

START

DEPENDENCIES:

1. Approved appraisals.
2. Final right-of-way maps.
3. Construction plans.
4. Title reports.
5. Right-of-Way documents.
6. Property descriptions complete.

DISTRIBUTION AND USE:

Used to obtain right-of-way.



R/W
No. **832**

ACTIVITY: Prepare condemnation package.

DEFINITION: Prepare condemnation package, submit to legal section.

OUTPUT
PROVIDED: Obtain possession of R/W parcel.

TASKS:

1. Prepare necessary condemnation forms.
2. Prepare package for parcel for Legal Section.
3. Request necessary plan changes.
4. Request update on ownership information.
5. Prepare final offer letter and send to landowner.
6. Request concurrence of Director.

START
DEPENDENCIES: Negotiation information and request for condemnation received from Field R/W Section.

DISTRIBUTION
AND USE: Used to obtain R/W.



ACTIVITY: Write Relocation Assistance Plan.

DEFINITION: Preparation of a plan of action to provide relocation assistance as required by both State and Federal regulations.

OUTPUT PROVIDED: Relocation Assistance Plan.

TASKS: Interview all project displacees, i.e., residences, businesses, non-profit organizations, farm operations. Prepare individual inventory.
Gather market data.
Interview other public agencies that may be involved.
Make required plan assurances.
Write plan.

START DEPENDENCIES: Authorization to appraise.

DISTRIBUTION AND USE: Used as a basis for providing property owner relocation assistance. Submit to FHWA for approval.

ACTIVITY: Provide Relocation Assistance.

DEFINITION: Determination of relocation benefits, and assistance to relocate displacees.

OUTPUT PROVIDED: Occupant Relocation.

TASKS:

- Gather residential market data in project areas.
- Review multiple listing catalogs.
- Canvass neighborhoods adjacent to project area.
- Obtain building estimates from licensed building contractors.
- Locate building sites.
- Locate rental property for both residential tenants and businesses.
- Contact realtors.
- Review appraisal for applicable data.
- Compute replacement housing supplements (payments)
- Compute moving expense entitlements (payments)
- Compute increased mortgage interest expense payments.
- Prepare "Letter of Offer".
- Inform displacee of benefits and payments
- Offer relocation services to the displacee.
- Negotiate on behalf of the displacee to purchase replacement property.
- Locate sources of mortgage money.
- Review purchase agreements, escrow agreements, building contracts, etc.
- Make physical inspection of residential properties in order to insure their compliance with Federal guidelines.
- Assist displacee in obtaining title insurance.
- Determine which closing costs the displacee may be reimbursed by the State.
- Compute "In lieu of actual reasonable moving expense". (Discontinued Business) payments.
- Review tax form, affidavits, etc.
- Compute downpayment to purchase supplemental payments.
- Compute rental supplemental payments.
- Review lease agreements, purchase contract, etc.
- Issue 90 day notices.

START

DEPENDENCIES: Write relocation assistance plan.
FHWA approval of plan.
Completion of negotiations and/or permanent Order of Entry.
Authorization to being negotiations.

DISTRIBUTION AND USE: Used to remove relocatees from R/W.



R/W

No. 838

ACTIVITY: Negotiate Pit Agreements and Haul Roads.

DEFINITION: Negotiations with landowners for the use or acquisition of property to provide borrow or resurfacing pits and haul roads for the project.

OUTPUT PROVIDED: Pit agreements and haul roads.

TASKS: Research
Negotiations
Preparation of stipulation agreements.
Apply for pit agreements and haul roads on State land, Indian or Federal land.
Order warrant.

START DEPENDENCIES: Archeological clearance.
Request to obtain pit and haul road options.
Pit and haul road descriptions.

DISTRIBUTION AND USE: Used to certify right-of-way clearance.



R/W
No. **840**

ACTIVITY: Negotiate Federal, State and Indian Lands.

DEFINITION: Preparation and submittal of applications to Governmental Agencies for purpose of acquiring right-of-way, and obtain consent to build highway on Federal, State and Indian lands.

OUTPUT PROVIDED: Requests for Federal, State and Indian lands, and obtain R/W

TASKS: Agree on Federal stipulations for fencing, seeding, erosion control, etc.
Apply for right-of-way on Federal, State and Indian lands.
Preparation of documentation.

START DEPENDENCIES: Authorize right-of-way acquisition, receipt of appraisals and leasehold grant of possession.

DISTRIBUTION AND USE: Obtain right-of-way and certify right-of-way clearance.



ACTIVITY: Remove Acquired Improvements.

DEFINITION: Determine salvage value of improvements for owner retention.
Review appraisals to determine what improvements need to be removed.

OUTPUT PROVIDED: Improvement removal list.

TASKS: Review right-of-way plans.
Field trip to project site.
List improvements that have to be moved.
Set salvage value on improvements that will be moved or retained by previous owners.
Arrange for demolition contracts if necessary.
Arrange for District to remove encroachments.
Provide for notice to contractor for him to remove improvements.
Interview or prepare correspondence with owners.
Document files of action taken.
Certify right-of-way cleared of improvements.

START DEPENDENCIES: Right-of-way appraisals completed.
Negotiations completed.
Relocation assistance completed.
Survey of improvements completed.

DISTRIBUTION AND USE: Used to prepare for and complete removal of improvements in conflict with construction. Used to certify right-of-way is cleared of improvements.



R/W

No. **844**

ACTIVITY: Prepare Deed Exhibit.

DEFINITION: Prepare exhibits to accompany deed.

OUTPUT
PROVIDED: Exhibit supplied to complete deed.

TASKS:

1. Review plans.
2. Review Memorandum of Title for description and ownership.
3. Prepare reproducible exhibit of acquisition.
4. Prepare written Deed Description.
5. Prepare route descriptions for recording plans in county.
6. Prepare miscellaneous deed descriptions as requested.

START
DEPENDENCIES: Authorization to acquire R/W.

DISTRIBUTION
AND USE: To Field R/W Section acquiring parcel to complete deed for acquisition of R/W.



ACTIVITY: Relocate Utilities

DEFINITION: Administer agreements and provide for adjustment of railroad and/or utility facilities.

OUTPUT PROVIDED: Removal of facilities that are in conflict with highway construction

TASKS: Project familiarization.
Review and research agreement and other information.
Telephone, letter and personal contacts with owners.
Field trips to project site with owners.
Arrange for staking project.
Review and approve utility occupancy forms.
Authorize companies to commence relocation.
Monitor construction and review progress.
Make up utility work orders.
Authorize progress payments.
Perform final inspection.
Arrange for coordination of utility work with road construction.

START

DEPENDENCIES: 1. R/W purchase for relocation complete.
2. Utility and railroad agreements received.

DISTRIBUTION AND USE: To clear construction area of existing utility and railroad facilities.

Note: This task performed by Construction Bureau.



R/W
No. **848**

ACTIVITY: Certify Right-of-Way Clearance

DEFINITION: Securing of right-of-way through negotiations or condemnations.
Assurance of R/W clearance through negotiations or condemnations.

OUTPUT PROVIDED: Right-of-way clearance to let project.

TASKS: Research right of way data.
Indicate right of way clearance.
Prepare letter.

START DEPENDENCIES: Preparation of legal notices.
Negotiate pit agreements.
Remove encroachments.

DISTRIBUTION AND USE: Incorporated into the PS&E assembly, for FHWA approval and for advertising of the final plans.



R/W
No. **850**

ACTIVITY: Certify Clearance of Utilities

DEFINITION: Certification of Utility clearance with Federal Highway Administration requirements to continue project design.

OUTPUT
PROVIDED: Utility certification.

TASKS: Prepare documentation.
Coordinate efforts between agencies.

START
DEPENDENCIES: Assure utility relocation is complete or included in road contract.

DISTRIBUTION
AND USE: Used to certify Utility clearance to Road Design and FHWA.



Activity: Prepare and file cases in District Court.

Definition: Prepare cases for the Legal acquisition of rights of way necessary for the construction of a project.

Output
Provided: Complaint and summons which are: (1) filed in District Court, (2) served on Defendants, (3) sent to Attorney General. Lis Pendens filed in Clerks and Records Office and District Court. Memo notifying R/W of dates of service of summons.

Tasks: Review descriptions, plans and title memos. Prepare cases for filing.

1. Determine names of Defendants and their addresses.
2. Determine type of complaint to be used.
3. Prepare complaint, summons, lis pendens and praecipe.
4. File complaint in District Court, have summons served, file lis pendens with Clerk and Recorder.
5. Send copy of complaint to Attorney General.
6. Notify R/W of dates of service of summons.

Start

Dependencies: Receipt of condemnation packages from R/W.

Distribution

and Use: Distribution of dates of service of summons to R/W so appraisals can be updated to proper date. Distribution of complaint to Attorney General is required by law.



- Activity: Prepare for and Secure Preliminary Orders of Condemnation.
- Definition: Secure preliminary orders of condemnation from District Court. The condemnation orders determine that there is "necessity" for the taking of the individual parcels of property.
- Output Provided: Signed orders that are filed in District Court.
- Tasks: The tasks depend in part upon the legal position taken by defendants.
- A. If Defendants admit the necessity of taking in answer then:
 1. Prepare and obtain Judges signature on Preliminary Order.
 2. File the Order in District Court.
 - B. If Defendants deny necessity of taking, but do not actively contest necessity then:
 1. Prepare order, appear at the time set for necessity hearing and obtain Judges signature.
 2. File the Order in District Court.
 - C. If Defendants deny necessity, but are later agreeable with plan changes or for other reasons, then:
 1. Prepare stipulation agreeing that preliminary order can be entered.
 2. Secure signatures of Defendants' Attorneys.
 3. File stipulation in Court and secure Judge's signature on Preliminary Order of Condemnation.
 4. File the Order in District Court.
 - D. If Defendants deny necessity and participate in necessity hearing, then:
 1. Review right of way and construction plans.
 2. Research pertinent law and prepare legal brief.
 3. Determine who witnesses will be, contact them, and prepare them to testify at hearing.



4. If necessary, prepare Discovery or depose Defendant's witnesses prior to hearing.
5. Participate in actual Hearing before the Court.
6. File signed Order in District Court.

Start

Dependencies: Order issued by District Court setting a hearing on Preliminary Order of Condemnation.

Distribution

and Use: No distribution of Preliminary Order of Condemnation.

JB/snk/10H

Activity: Secure Orders Putting Plaintiff in Possession.

Definition: Secure orders from the District Court permitting the Department to use the property sought to be condemned during the pendency of legal proceedings; thus allowing construction of project to proceed.

Output

Provided: Orders Putting Plaintiff in Possession and R/W Form 106
"Attorney's Report of Possession."

Tasks: The tasks depend in part upon the legal position taken by defendants. The three most common methods whereby possession of a parcel can be secured are:

A. Deposit Answer of Defendant

1. Review Answer filed by Defendant and Departmental appraisals.
2. Prepare claim and R/W 110 Form for submission to R/W.
3. Receive warrant and send same to Clerk of Court along with Motion to put Plaintiff in possession and Order.
4. Receive signed Order, fill out R/W Form 106 and send form to R/W.

B. Stipulate for Order with Defendants Attorney.

1. Review file, including Departmental Appraisals.
2. Contact Defendants Attorney and conduct negotiations.
3. Prepare stipulation and obtain Attorneys signature; prepare Order.
4. Prepare claim and R/W 110 Form for submission to R/W.
5. Receive warrant and send warrant, stipulation and order to District Court.
6. Receive signed Order, fill out R/W Form 106 and send form to R/W.

C. Prepare and Try Commission Hearing.

1. Review answer filed by Defendant and Departmental appraisals.
2. Conduct Discovery (Review and send out interrogatories and answer same; conduct depositions.)



3. Secure person to act as value commissioner; prepare and file forms for his nomination and qualification.
4. Prepare and have signed order setting date for Commission Hearing.
5. Review plans with Engineering witness and prepare witness to testify.
6. Prepare legal instructions for use at Commission Hearing.
7. Try Commission Hearing in District Court.
8. Receive report of Commissioner's on amount of just compensation.
9. Prepare claim and R/W 110 Form for submission to R/W.
10. Prepare motion and order for filing in District Court.
11. Receive warrant and send warrant, motion and order to District Court.
12. Receive signed order, fill out R/W Form 106 and send form to R/W.

Start

Dependencies: Receipt of Preliminary Order of Condemnation for condition C receipt of updated appraisal from R/W. Receipt of warrants from Accounting.

Distribution

and Use: Five copies of R/W Form 106 is sent to R/W for their distribution.



ACTIVITY: Prepare Preliminary PS&E & Related Documents

DEFINITION: Preparation of the various plans together with specifications & estimate into one complete assembly which is used as the documents for receiving bids for contract.

OUTPUT PROVIDED: Proposed Bidding Documents

TASKS: Assemble project data.
Assure the various plans are compatible with each other and meet FHWA & Department requirements.
Prepare project Work Sheet setting down the required splits, etc.
Prepare Bid Proposal & Specifications setting forth the location, design features & construction requirements.
Hold Board of Review meeting to review project in general, establish unit prices & determine contract time.
Have originator of plans make the necessary plan corrections and/or revisions.
Prepare Engineer's Estimate.
Have Word Processing type Bid Proposal, Specifications, Estimate, etc.
Have Data Processing process Work Sheet.
Have Printing process plans & proposals.
Prepare & obtain approval of City Agreements and/or County Resolutions.
Distribute preliminary PS&E documents.

START

DEPENDENCIES: Receipt of original plans for projects which have an established letting date. Plans to be furnished minimum of 13 weeks prior to letting.

DISTRIBUTION AND USE: Distribution made within the Department & FHWA for their review and comments.



ACTIVITY: Prepare Final PS&E & Obtain Approval & Authority to Advertise

DEFINITION: Make appropriate changes to the plans, specifications & estimate as suggested by those reviewing the preliminary documents, and assure project is complete and ready for advertising for bids.

OUTPUT PROVIDED: Final Approval of Project

TASKS: Take necessary action to incorporate appropriate suggestions into the PS&E Assembly.
Complete and/or add any documents required, but not available at time of preliminary PS&E review.
Have necessary changes made to plans.
Have necessary revisions & additions processed by Word Processing, Data Processing & Printing.
Distribute changes.
Obtain Right of Way Certificate.
Obtain Utility Certificate.
Assure project is programmed and authorized by FHWA. Obtain PS&E approval and authority to advertise from FHWA (I projects) & Preconstruction Bureau Chief (CA projects).
Prepare Advertising (Legal & General Notice).
Have Bidding Documents Collated.

START

DEPENDENCIES: Receipt of comments from Department & FHWA as a result of review of the preliminary PS&E documents. Comments to be received a minimum of 8 weeks prior to letting.

DISTRIBUTION AND USE: Project is complete for advertising for bids.



ACTIVITY: Advertising For Bids

DEFINITION: Notice to the public of the Department's intention to receive bids on certain projects, and afford all interested parties the opportunity to obtain the necessary bidding information and documents.

OUTPUT

PROVIDED: Bidding Documents & related information.

TASKS:

Mail Advertising (Legal & General Notice).
Process Requisitions and mail Bidding Documents.
Prequalification of Contractors.
Prepare and issue any necessary Addenda to Bidding documents.
Prepare Bid Comparison Sheet and Checklist.

START

DEPENDENCIES: Receipt of PS&E Approval and Authority to Advertise a minimum of 4 weeks prior to scheduled letting.

DISTRIBUTION
AND USE:

Furnish contractors, subcontractors, suppliers, manufacturers and any other interested parties with the necessary bidding documents.



ACTIVITY: Bid Letting and Post Letting Activities

DEFINITION: Processing of Contractor's bids.

OUTPUT

PROVIDED: Award of Contract to lowest responsible bidder.

TASKS:

Receive, open and read bids
Check and review bids
Complete Bid Comparison Sheet
Furnish Engineer and Commission with information pertaining to bids
Award of contract and/or rejection of bids
Prepare and distribute Award Sheets
Prepare and distribute Bid Tabulations
Distribute contract plans and specifications
Prepare Detail Estimate (obtain federal participation)
Bill for bidding and related documents

START

DEPENDENCIES: Opening of Bids

DISTRIBUTION

AND USE: Notification to all concerned parties of award of contract.

DBW/pz/36E

